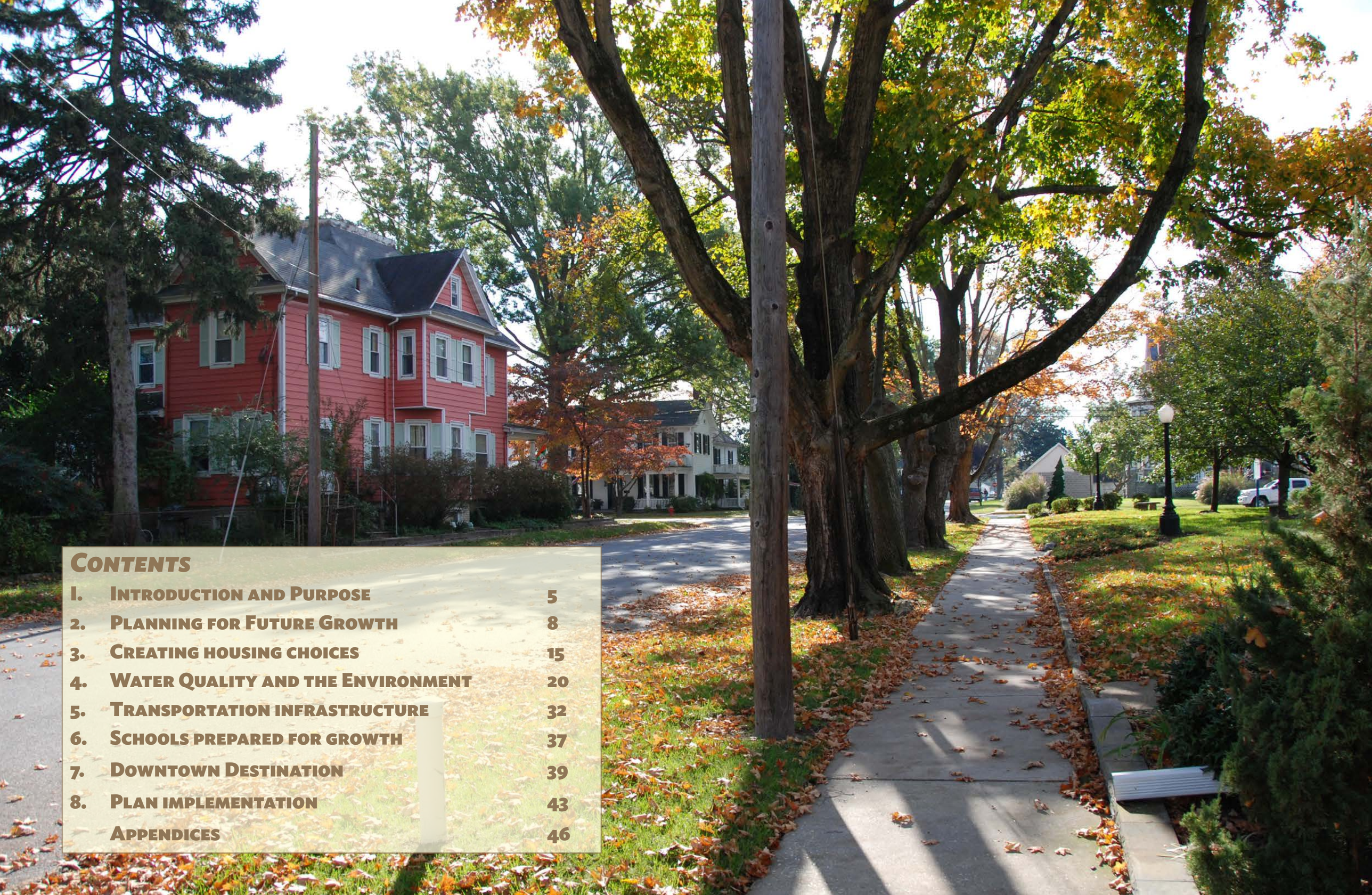
A Master Plan for Bridgeville and Greenwood

SUSTAINABLE GROWTH IN THE NANTICOKE WATERSHED

FINAL PLAN - AUGUST 2014



Contents

Acknowledgements

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About the Master Plan

The University of Delaware's Sustainable Coastal Communities Initiative coordinated this Master Plan project through sponsored awards from the National Fish & Wildlife Foundation and the Delaware Department of Natural Resources and Environmental Control.

Project management, facilitation for the initial public workshops and development of the methodology for mapping growth scenarios and performing build-out analyses was performed by staff from the University of Delaware's Sustainable Coastal Communities Initiative. Bryan Hall, formerly a principal planner with the Delaware Office of State Planning Coordination, worked with both towns and the University to initiate the planning process.

This final plan was researched, written and designed by Lee Ann Walling, AICP and LEED-AP, and principal of Cedar Creek Sustainable Planning Services.

I. Introduction and Purpose

Bridgeville and Greenwood are western Sussex County communities with a strong agricultural tradition. Among other commonalities, they share a school district, a US highway, a wastewater treatment plant and a watershed.

Residents of both towns value their local ties, civic pride, community organizations, small town way of life and their local businesses. Their community assets include churches, libraries, historic architecture, viable agribusinesses, committed volunteer fire companies, shady residential streets and wide open spaces.[1]

They worry about keeping and attracting good jobs, long-time businesses closing, the isolation of newer residents, and growth changing their towns' character forever.

Town leaders accountable to their citizens also are concerned that environmental regulations related to pollution control efforts in the Chesapeake watershed will create financial burdens for the town and ratepayers. The Bridgeville Wastewater Treatment Plant is aging and out of compliance with new and much tougher federal water quality standards.

With that backdrop of community values and concerns, Bridgeville and Greenwood leaders agreed to be proactive about growth. Bridgeville's last comprehensive plan was adopted in 2002 and updated in 2006. Greenwood's most recent comprehensive plan was adopted and certified by the state in 2008. Delaware Code Title 22, Section 702 (c) requires a plan review every five years.

The towns were able to launch the master plan with a grant from the National Fish and Wildlife Federation's Chesapeake Bay Stewardship Fund, which also funded a comprehensive study of Bridgeville's Wastewater Treatment Plant by Davis Bowen & Friedel Inc. The University of Delaware's Sustainable Coastal Communities Initiative provided hands-on planning tools and helped local stakeholders choose a planning area, determine how growth would occur within that area over a period of several decades, and then performed extensive analyses using Geographic Information Systems (GIS) and hands-on Community Viz software *(see page 8)*.

Guiding principles for growth

Planning how and where a community should grow is critical to protecting its physical, economic, cultural and natural assets; preserving a valued way of life; understanding the financial and less tangible costs of growth; and proactively attracting desired development. While the word "sustainable" can be misused or misunderstood, in this case it simply means the two towns choose to grow in a way that their unique qualities will still be there for future generations to enjoy.

During several community meetings (see Appendix A), a stakeholder group that included leaders of both Bridgeville and Greenwood discussed how they wanted growth to occur. Their discussions resulted in five overarching guiding principles for this plan:

1. **Preserve community character and the natural, historic and cultural assets that make the town special.**
   a. Nurture downtown and business community and explore more specialized niche opportunities for downtown development
   b. Promote infill to attract new and appropriate residential development
   c. Maintain and improve parks and vacant lots
   d. Seek available resources for Main Street-type (re)development and branding

1 From March 21, 2011 Master Plan Kickoff and Visioning Session with stakeholders from both towns, Bridgeville Public Library.

2. **Contain growth on US 13 and around new high school.** Development along the US 13 corridor is relatively light compared to Delaware towns farther south. Both towns have new service roads in place that can accommodate more commercial development, but realize that overdevelopment can be unsightly, increase traffic, and undermine prospects for a healthy downtown.

   Even though the new Woodbridge High School is in a Level 2 Developing Area, according to the 2010 State Strategies for Policies and Spending, both towns would like to discourage the residential growth that can be attracted to a school. There is one force main that connects the two towns without the capacity to connect to subdivisions or strip development, so residential development there would likely be low-density growth on individual septic systems. Also, since the high school is located in an unincorporated area, residential growth there could siphon new development away from the towns.

3. **Enhance agribusiness sector and value preserved and working farms.** Both towns have a large agribusiness sector that depends on convenient proximity to the farming operations that provide them with grain, produce and livestock. Low-density development that leapfrogs across fields and clogs country roads will hurt the viability of these companies and the farmers who supply them – including those who have made the decision to remain in agriculture by selling their development rights.

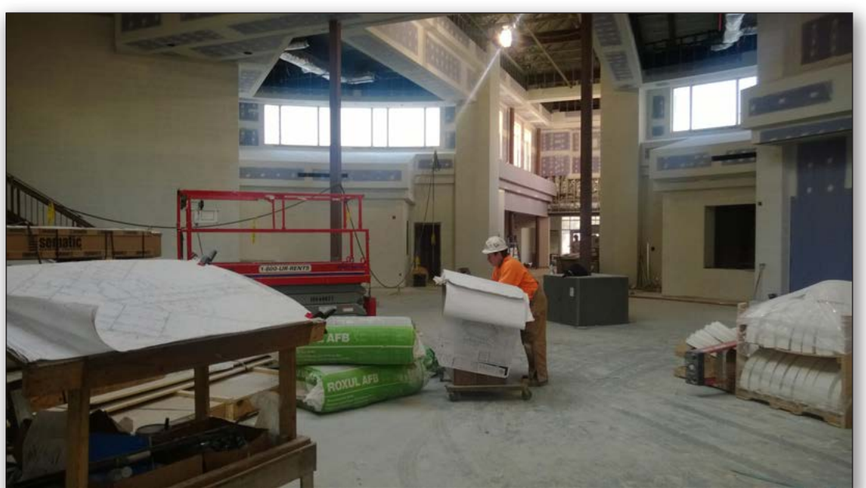
4. **Make infrastructure improvements that will be cost-effective for residents while protecting water quality in the Nanticoke and its tributaries.** The need to upgrade the Bridgeville Wastewater Treatment Plant while keeping it affordable for ratepayers is an overriding concern of that town.

5. **Unite key sections of towns with bike/walk paths to improve community connectedness**. If towns are not proactive, future new residential development can be an enclave with no "town-like" characteristics, walled off from existing residents. This plan will make several recommendations regarding future annexations and residential planned communities.

The Chesapeake Challenge

Delaware's Watershed Implementation Plan for the Chesapeake new sources of non-point source pollution to be offset—i.e. construction activities, new development, new agriculture activities or structures.

As of July 2014, no offset trading program has been established by the state. The towns should refer to this master plan to reach agreement with the Department of Natural Resources and Environmental Control on what their starting point, or baseline, is and how to measure net new pollution loading from different land uses. This issue will be discussed more thoroughly in Section 4.



The new Woodbridge High School, located on farmland between the Greenwood and Bridgeville, represents an intergovernmental planning challenge for the towns, Sussex County and state.

The result

As described in the following section, the Master Planning process generated a detailed scenario for future growth in the Bridgeville-Greenwood area. Following this plan will yield many sustainable benefits for both towns and their citizens, water quality and the natural environment, farmers and agribusinesses, and the taxpayers of Delaware.

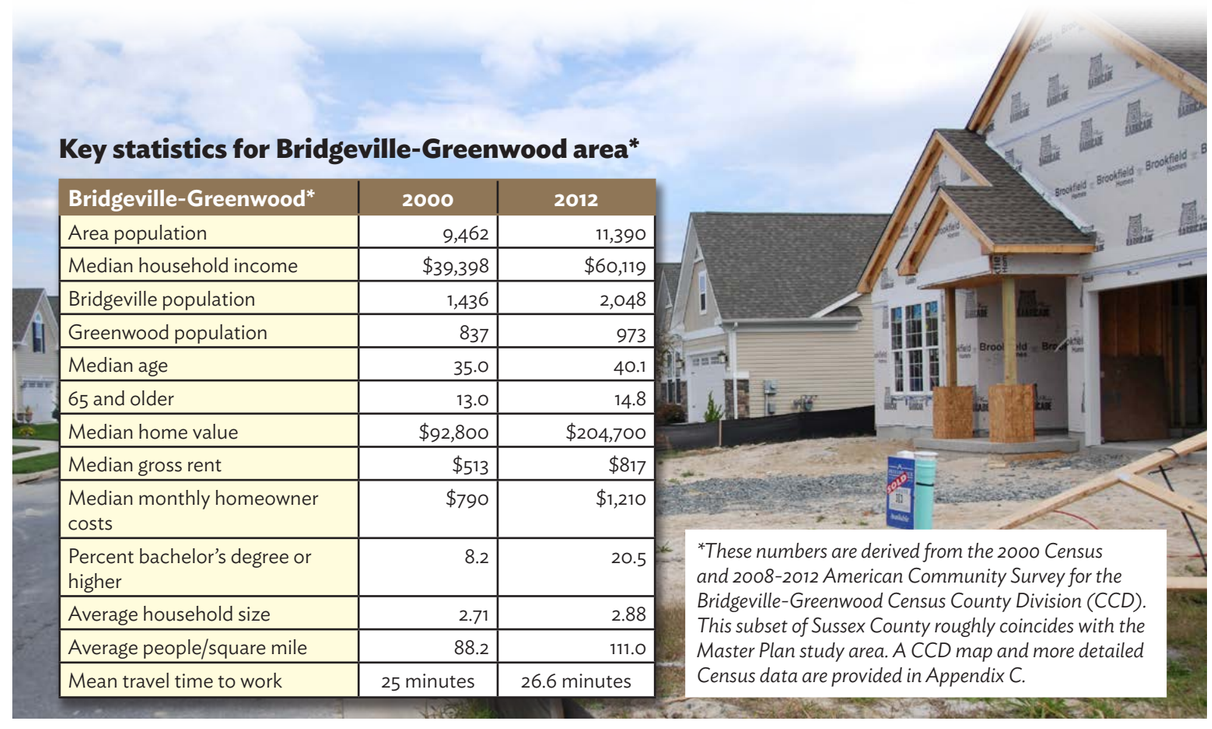
In a nutshell, the plan:

- Dramatically reduces the number of residential units that would be permitted under the existing, default Sussex County and town plans;
- That reduction enables both towns to plan for realistic residential and commercial growth that will not overwhelm infrastructure and overburden taxpayers and ratepayers;
- Focuses growth with more "town-like" development, reducing low-density, land-consuming sprawl that will strain services and endanger the viability of agribusiness and farming operations;
- That more focused growth directs development to locations served by Bridgeville's wastewater treatment plant which – when upgraded – will treat effluent to a much high standard than individual septic systems can;
- The more focused and planned growth also significantly reduces the percentage of paved roads, rooftops and other manmade surfaces that contribute to pollution, drainage problems and flooding; and
- With more town-like growth, the downtowns and local businesses of both towns are in a better position to survive and prosper.

The purpose of this document is to straightforwardly explain the Master Plan and how following it will benefit the Bridgeville-Greenwood community as well as the tributaries of the Chesapeake watershed that drain the study area.

Statistics and other data are used sparingly and when they add value, but the appendices contain additional detail and backup information.

This master plan does not supercede the current comprehensive plan of either town, but it does include detailed implementation measures that could guide future updates of those plans in accordance with Title 22, Section 702 of Delaware Code.



Key statistics for Bridgeville-Greenwood area*

Bridgeville-Greenwood*	2000	2012
Area population	9,462	11,390
Median household income	$39,398	$60,119
Bridgeville population	1,436	2,048
Greenwood population	837	973
Median age	35.0	40.1
65 and older	13.0	14.8
Median home value	$92,800	$204,700
Median gross rent	$513	$817
Median monthly homeowner costs	$790	$1,210
Percent bachelor's degree or higher	8.2	20.5
Average household size	2.71	2.88
Average people/square mile	88.2	111.0
Mean travel time to work	25 minutes	26.6 minutes

**These numbers are derived from the 2000 Census and 2008-2012 American Community Survey for the Bridgeville-Greenwood Census County Division (CCD). This subset of Sussex County roughly coincides with the Master Plan study area. A CCD map and more detailed Census data are provided in Appendix C.*

2. Planning for Future Growth

The Bridgeville-Greenwood Master Plan is infused with participation from community leaders, residents and the state agency stakeholders that provide services, review and oversight. For a complete list of meetings related to development of the Plan, see Appendix A.

Public participation began February 8, 2012 with a public night meeting in the Bridgeville Public Library. Besides dozens of smaller meetings there were at least nine additional public meetings as of February 2014:

- March 21, 2012 – Master Plan Steering Committee (elected officials, town managers and other stakeholders), Bridgeville Public Library
- June 12, 2012 – Public workshop, Bridgeville Public Library
- July 12, 2012 – Master Plan Steering Committee
- August 7, 2012 – Town of Greenwood Commissioners presentation
- August 13, 2012 – Town of Bridgeville Commissioners presentation
- August 22, 2012 – Preliminary Land Use Service (PLUS), publicly noticed meeting in Dover
- September 25, 2012 – Public forum, Bridgeville Public Library. About 60 persons attended.
- September 27, 2012 – Public forum, Greenwood Fire Hall. About 12 persons attended.
- November 27, 2012 – Master Plan meeting with Bridgeville Town Commission

Facilitated by the Delaware Office of State Planning Coordination and the University of Delaware's Sustainable Coastal Communities Initiative, the process began with an introduction to planning, a visioning exercise, and a description of the challenges posed by the Chesapeake Watershed Implementation Plan (see Section 4).

Innovative, hands-on mapping techniques were used to define a study area and guide participants to suggest where different types of growth should occur. Details of the "weTable" technology and land-use modeling methodology are included at the following links:

- http://www.capehenlopenregionalplan.org/planning-tools
- http://www.capehenlopenregionalplan.org/wetable-technology
- http://www.capehenlopenregionalplan.org/land-use-types
- http://www.capehenlopenregionalplan.org/ud-scc-lu-model-transect-0

Because the towns straddle multiple subwatersheds (see Figure 2-1) and development activities in the towns can have an impact on water bodies well beyond town boundaries, the Master Plan Steering Committee chose a study area that encompasses 30,100 acres. The study area is shown on the maps included in this section.

What is a watershed?

The Master Plan Steering Team chose a study area that straddles four subwatersheds of the Nanticoke, which feeds into Chesapeake Bay. A watershed is a land area drained by a particular body of water.

Development and agricultural activities in and around both towns will affect water quality in these subwatersheds well beyond municipal boundaries. Adding to pollution are runoff from increased pavement and construction activities; individual septic systems; residential and agricultural fertilizers; conversion of forest to development; and poultry operations.

Source: Nanticoke Watershed Alliance

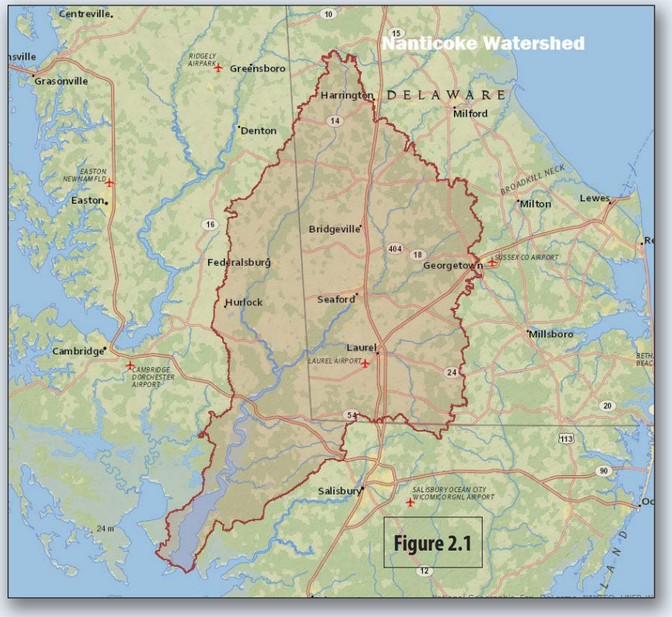


Figure 2.1

Painting the towns' future

The land-use modeling process uses a set of 100-acre tiles or squares to describe the land uses of a particular area. Each 100-acre square represents a community of varying land uses and housing densities – either in existence today or as a possibility in the future. The communities represented include:

a. **Rural Communities** (a 100-acre farm or natural preserve; 5-20 acre farms or agricultural business; or a rural village);

b. **Residential Communities** (a suburban community of single family and/or multifamily homes);

c. **Mixed Use Communities** with both residential and non-residential properties and

d. **Non-residential Communities** (Employment Centers such as business parks, large schools and institutions, or government centers and regional retail centers).

With each tile, there is a set of assumptions about density, percentage of residential vs. commercial development, type of wastewater treatment, amount of commercial square footage, people per household, etc. For example, T-4 (see Figure 2-2) represents a moderately dense residential community with mixed housing types. The early phases of Heritage Shores in Bridgeville are represented as T-4.

Using the weTable technology, the Master Plan Steering Committee electronically "painted" a projected map with the types of land uses they envisioned. They agreed on the guiding principles listed in the Introduction (Section 1) when making their choices.

Bridgeville Mayor Pat Correll, Bridgeville Commissioner John Mervine, Greenwood Town Manager John McDonnell, Bridgeville Commissioner Lawrence Tazzone and Ed Lewandowski of the University of Delaware's Coastal Communities Program look over the Master Plan Study Area.

The resulting tile-based map they initially agreed on is shown on the next page (Figure 2-3). This map went through several iterations as it was tweaked by Master Plan Steering Committee participants and planners to reflect changing conditions. For example, one large planned development of 1,800 units south of Heritage Shores (the Wheatley farm) was removed because its approvals expired and it reverted to agricultural zoning. As of January 2014, the farm was approved for permanent preservation.

To be more realistic and reflect what is actually on the ground, the tile map was converted to a parcel-based map. The resulting map (Figure 2-4) reflects all changes, out-of-play parcels and future land use plans as of January 2014.

	Suburban "T4"	**Category:** RESIDENTIAL **Residential Density:** 4 Dwelling Units/Acre **Commercial:** none	Moderate density residential community with single & multi-family buildings (MF). Form-based, compact pattern of development. No commercial except permitted "conditional use" or self-employment. Examples: Fenwick Island, The Peninsula, Henlopen Acres, Paynters Mill, and moderate density coastal communities.		

Figure 2-2: *One of the tiles and land-use descriptions used to characterize current land use and envision future land use in the Bridgeville-Greenwood Master Planning Area. Heritage Shores is depicted as a "T-4": Moderate density residential.*

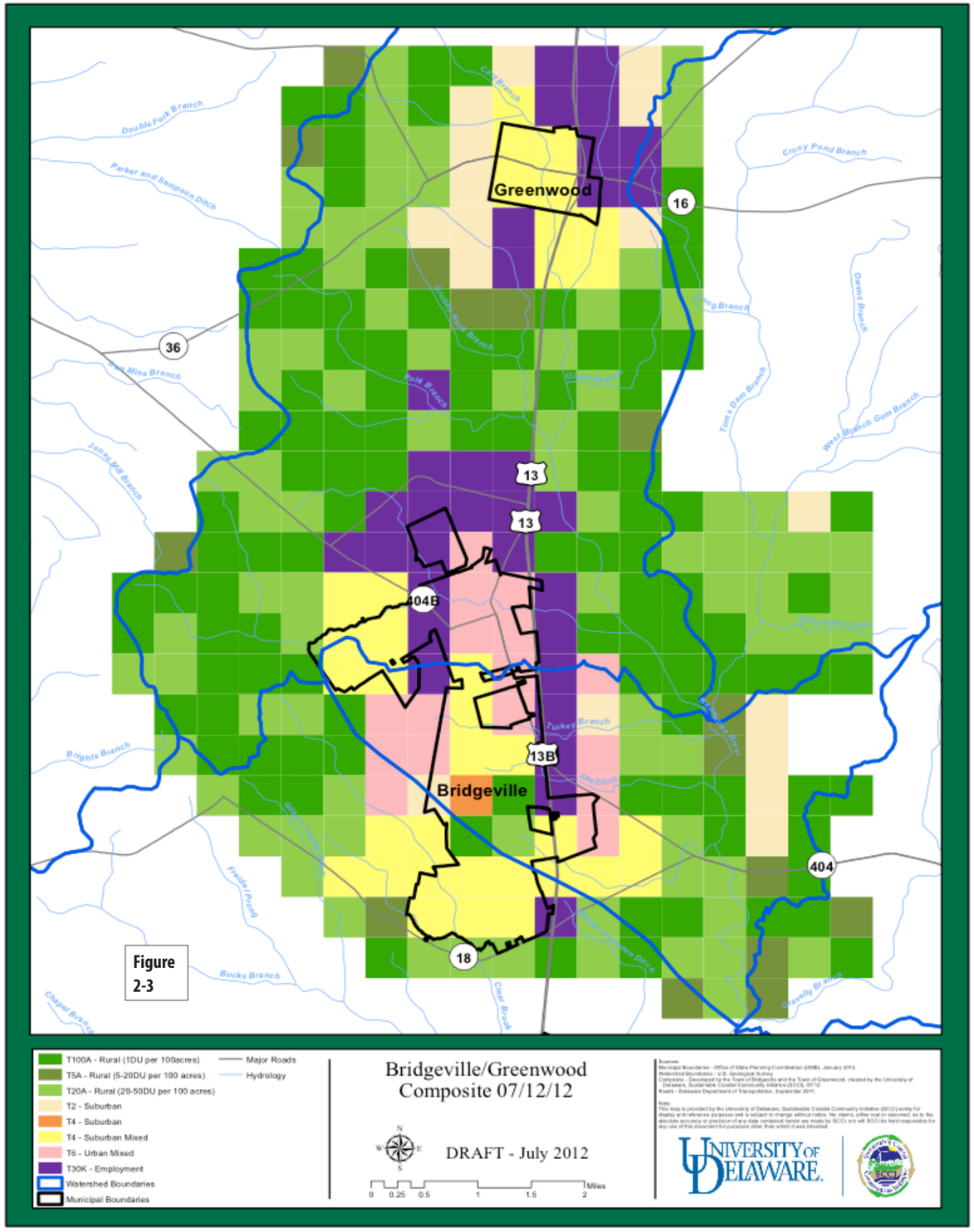


Figure 2-3

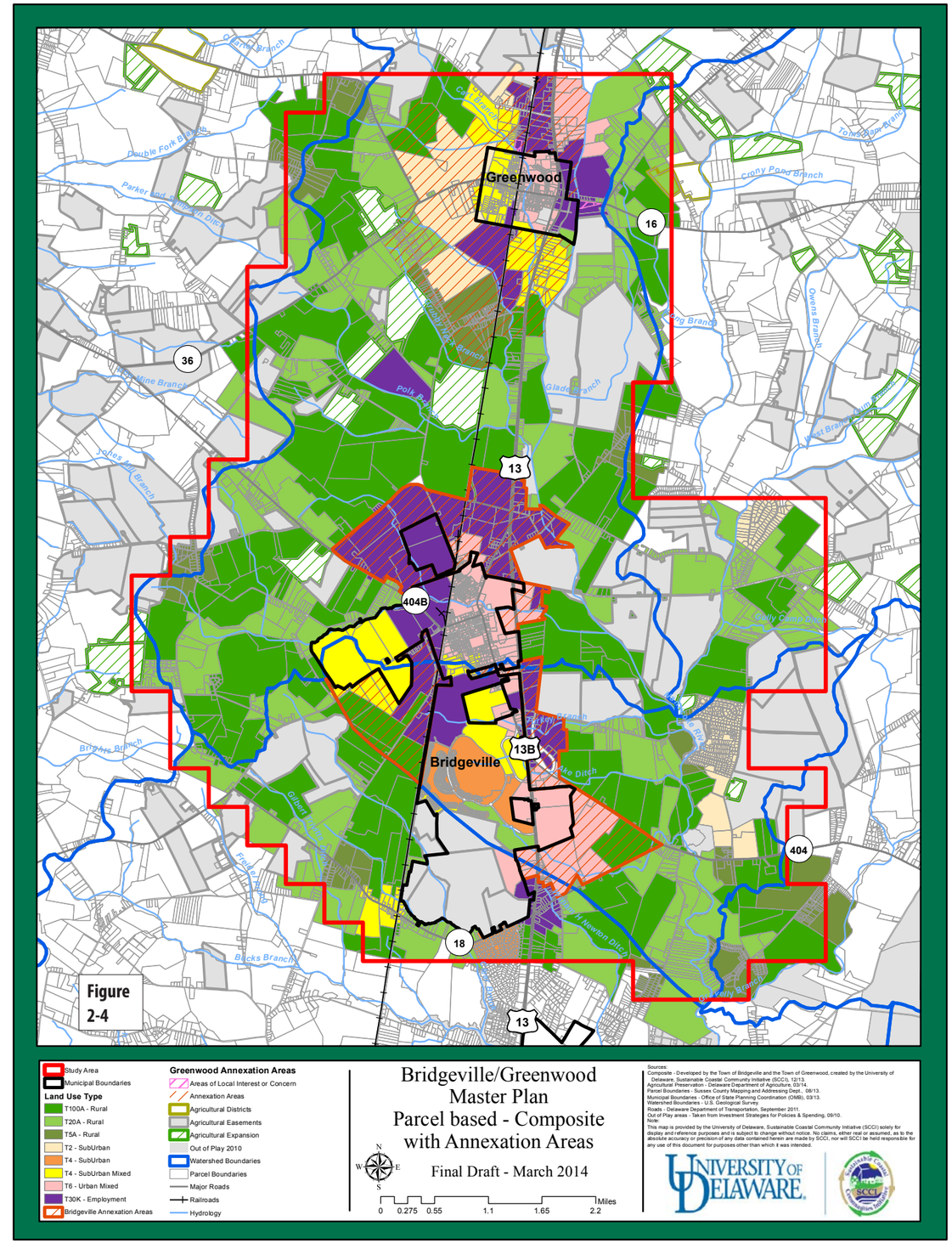


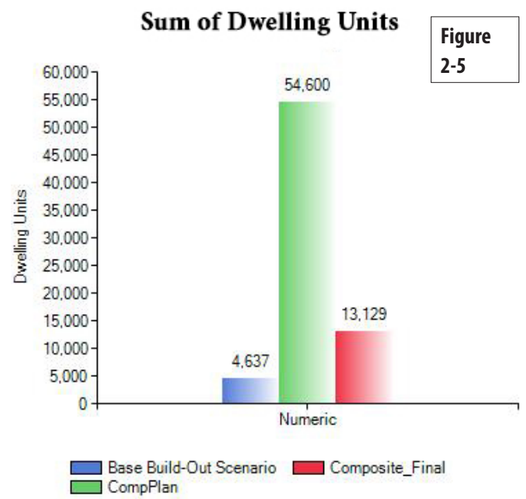
Figure 2-4

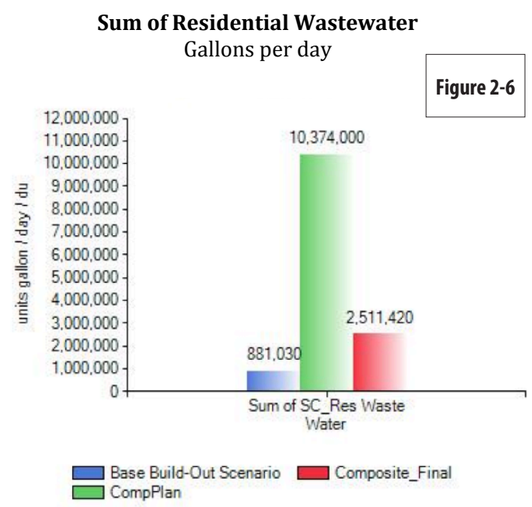
Costly low-density development curbed

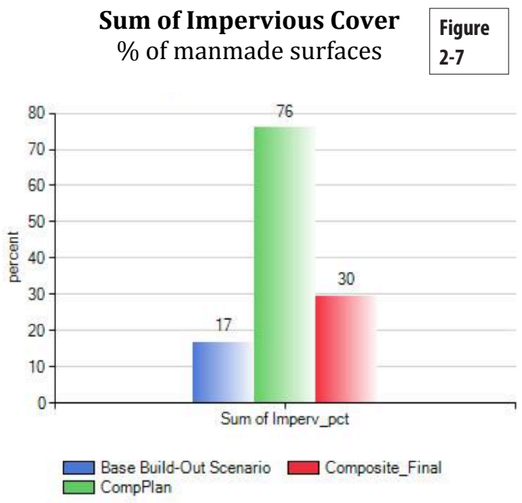
The results of this visioning, planning and modeling process are displayed in the buildout analyses for the study area, when compared to buildout that could occur under the existing, default Sussex County and Bridgeville comprehensive plans (green bar). The blue bar represents current land-use conditions. Buildout would occur over a period of decades. The red bar represents the future land use scenario incorporated into the Master Plan.

The bar chart below (Figure 2-7) demonstrates the environmental benefits of planning proactively for growth. The amount of impervious cover – surfaces such as roads, parking lots, rooftops and driveways – is dramatically lower in the Master Plan than in the towns' and Sussex County's approved comprehensive plans. That means less polluted runoff, better recharge of groundwater, and fewer drainage and flooding problems.

In the table on the opposite page, vehicle travel per day for both commercial and residential land uses is much lower – 62 percent and 75 percent, respectively. Besides clogging local roads, the additional vehicle miles traveled contributes to ozone pollution in Sussex County.







Buildout by the Numbers			
Category	**Existing**	**Current Comp Plans**	**Master Plan**
Dwelling Units	4637	54600	13129
Residents	12019	136262	33311
Employees	7449	36740	19279
Children	2989	28584	6878
Commercial Taxes	$153,779	$1,223,528	$497,502
Residential Taxes	$421,400	$5,305,830	$1,287,295
Commercial Vehcle Travel per day (miles)	75112	677423	259548
Residential Vehicle Travel per day (miles)	46370	525480	131,290
Commercial Wastewater (gallons/day)	135112	685423	371548
Residential Wastewater (gallons/day)	881030	10374000	2494510
Commercial Water Use (gallons/day)	168889	856779	464435
Residential Water Use (gallons/day)	881030	10374000	2494510
Impervious cover percentage	16.6	75.82	29.52

Figure: 2-8. *Source: University of Delaware. "Existing" means what is currently on the ground in the study area. "Current Comp Plans" means buildout of the existing town and county comprehensive plans. "Master Plan" is the new buildout scenario.*

The Future Land Use scenario developed by the Master Plan Steering Committee represents a more realistic buildout for which community leaders can plan. It supports more directed, "town-like" growth that is more cost-effective for taxpayers and ratepayers. How to achieve that town-like growth that will preserve community character and quality of life while protecting cultural and environmental assets is addressed in the Implementation section.

While some might question a "loss" of projected tax revenues under the Master Plan scenario, the residential growth that would occur under the default, existing comprehensive plans of Sussex County and Bridgeville generates significant costs for school districts and transportation and wastewater infrastructure. Numerous studies (see sidebar on page 19) have demonstrated that stand-alone residential development requires more in government services than it generates in revenues. There are also environmental costs for the additional vehicles miles traveled and more paved and covered surfaces.

Sticking to their Principles

Implementing this plan achieves the Guiding Principles set forth by the Master Plan Steering Committee. In Bridgeville, especially, this plan puts more emphasis on mixed-use development – residential and commercial – that is clearly connected with and is a natural extension of the existing town, rather than a stand-alone enclave of disconnected residents.

In the section on Housing Choice, the plan discusses the need for market-rate housing choices that reflect clearly changing demographics and desires. Working families that include teachers, police officers, government employees and health-care workers would find the area attractive for their families, if the right housing mix were offered. In turn, their presence provides customers for local businesses and the downtown areas.

The plan also looks toward future annexations to the north along Alternate 404, creating an attractive corridor for agribusiness and other light industrial businesses.

In keeping with the Guiding Principles discussed by the Master Plan Steering Committee, the area around the new Woodbridge High School remains "green" or agricultural. The towns hope for very minimal residential development in that area to avoid sprawl and to keep new residents in their towns. Such a goal will require intergovernmental coordination, including with Sussex County. The agricultural parcels surrounding the school would be appropriate candidates for farmland preservation.

Commercial development along US 13 stays in the corridor where service roads already have been built or are planned. (See the section on Transportation Infrastructure.) Limiting strip development along US 13 is another Guiding Principle of the plan.

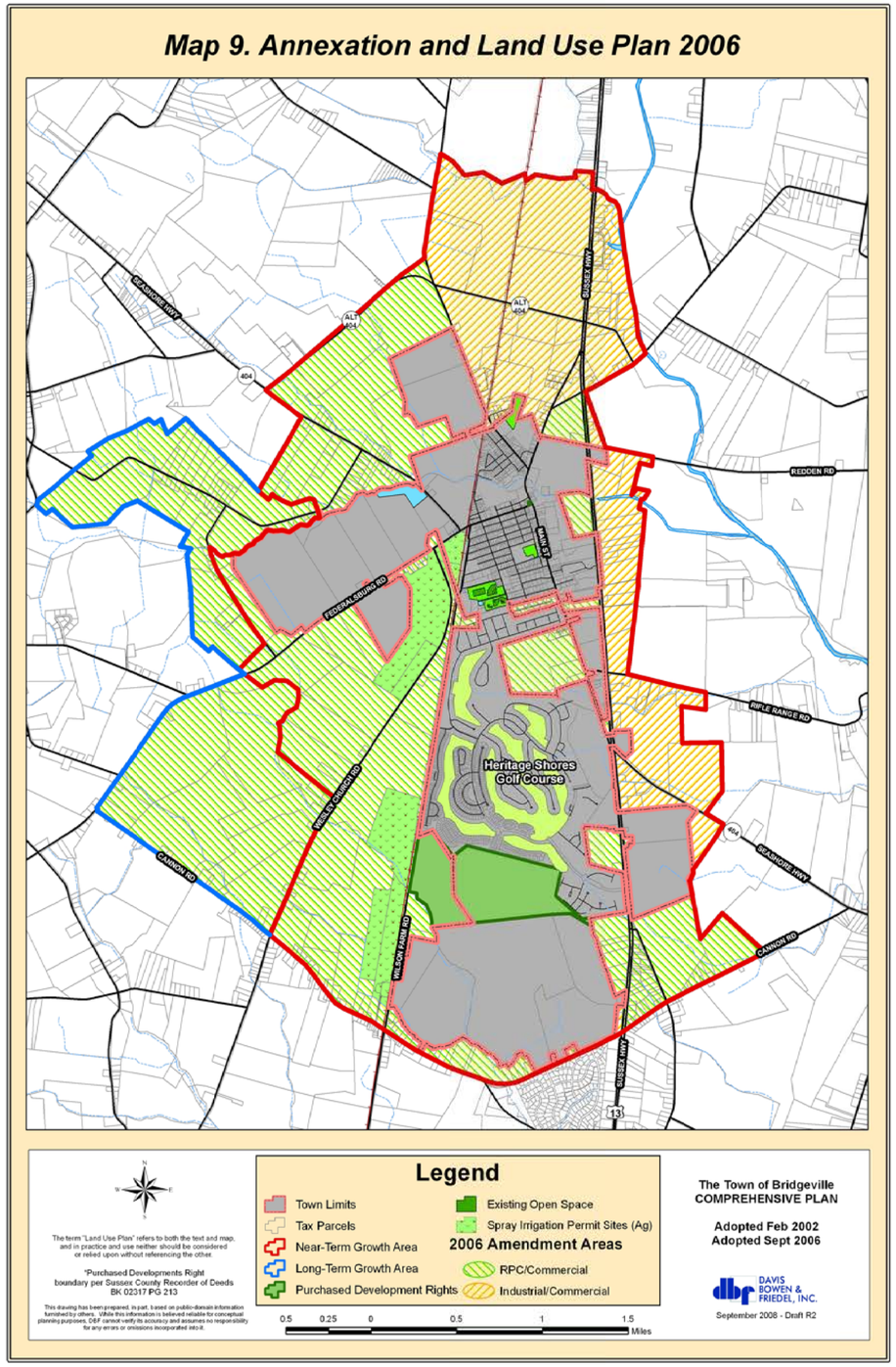


Figure. 2.9. *This is Bridgeville's current (updated 2006) comprehensive plan. The proposed Master Plan contemplates more compact development and buildout than this plan.*

3. Creating housing choices

Small towns such as Bridgeville and Greenwood are affordable places for working families to live, work and play. The median value of homes in the census tract that includes both towns is $204,700 – 17 percent lower than the Sussex County median of $246,900.

Even with that lower median home value, the numbers tell a story of the need for more market-based housing choices for working families – people such as teachers, police officers, hospital workers and government employees.

Of the 4,422 housing units within that Census tract, 67 percent are single-family detached homes, compared to 62 percent for Sussex County as a whole and 58 percent for Delaware.

The vacancy rate for rental units in the Bridgeville-Greenwood area is only 2.0 percent, compared to 8.7 percent for all of Sussex County and 10.7 percent for the state.

Changing demographics indicate an increasing preference for a housing type other than the large-lot suburban detached home, but supply is not meeting demand. Driving this change are the economy; aging Baby Boomers who want smaller houses and yards and a return to the close-knit neighborhoods they remember as children; the growing number of single heads of households; non-native Americans with larger, multi-generational families; and an increasing demand for more compact, mixed-use walkable communities.

Recognizing this trend, the developers of Heritage Shores, the age-restricted golf-course development on the southern end of Bridgeville, changed their plans for Phase 3 to include smaller homes on 40-by-65-foot lots, arrayed around a common green. They also plan condominiums and multi-family structures, as well as a local marketplace. The density for Phase 3 will exceed 5 units per acre.

Housing Snapshot: Ownership and Type

Figure 3.1	Delaware		Sussex County		Bridgeville-Greenwood	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total units	403,095		121,678		4,422	
Occupied	332,837	82.6	75,286	61.9	3,789	85.7
Vacant	70,258	17.4	46,392	38.1	633	14.3
Homeowner vacancy rate		2.9		5.6		6.1
Rental vacancy rate		10.7		8.7		2.0
Total housing units	403,095		121,678		4,422	
1, detached	233,510	57.9	73,847	60.7	2,961	67.00
1, attached	59,989	14.9	9,842	8.1	145	3.30
2 units	6,462	1.6	1,137	0.9	101	2.30
3-4 units	10,082	2.5	1,991	1.6	94	2.10
5-9 units	14,881	3.7	3,551	2.9	104	2.40
10-19 units	21,787	5.4	3,128	2.6	16	0.40
20 or more	17,469	4.3	3,237	2.7	38	0.90
Mobile home	38,808	9.6	24,992	20.5	963	21.80
Owner-occupied	242,808	73.0	60,159	79.9	2,839	74.90
Renter-occupied	90,029	27.0	15,127	20.1	950	24.10
Average household size, owner-occupied	2.63		2.43		2.78	
Average household size, rental	2.53		2.96		3.0	

Source: *US Census Bureau American Community Survey 2008-2012 Five-Year Estimates for Bridgeville-Greenwood Census County Division. Note: To simplify table, margins of error were omitted. Margins of error tend to grow as the sample size decreases. Full tables appear in Appendix C.*

According to the Town of Bridgeville, about 400 out of 2,000 planned units have been built in Heritage Shores, which broke ground in 2005.

Greenwood does not have any large-scale residential development plan; a single developer currently is active buying and rehabilitating properties in town, adding to the availability of quality affordable housing.

The Master Plan area would benefit from developers acting on demographic trends and statistics to plan walkable communities for all ages that seamlessly connect with the existing town and feature a variety of housing types, including condominiums and multi-family rental units. Age-restricted developments, gated communities, or other developments that create an enclave or physical separation from the town should be discouraged.

In Bridgeville, a master-planned community of 1,800 units, called Lindenmere, was planned and approved for the Baldwin Farm on Federalsburg Road on the west end of town. The Residential Planned Community project did not occur, and the zoning reverted to agricultural. However, the Master Plan map still calls for that parcel to be developed in that manner.

The Bridgeville-Greenwood area has 198 apartments that are subsidized by state and/or federal housing programs (see Figure 3.3). They represent 21 percent of the available rental units (houses and apartments) in the Bridgeville-Greenwood area, according to the US Census Bureau.

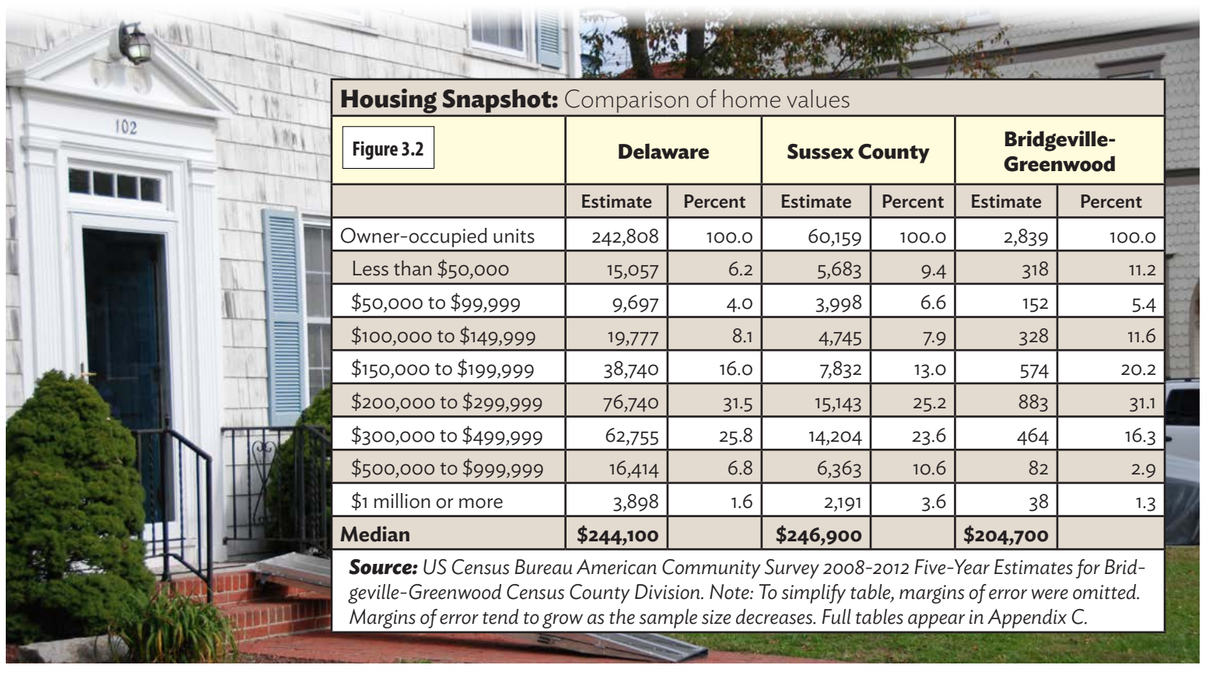
While the area could be considered to have its fair share of subsidized units, the low vacancy rate of 2.0 percent indicates a need for rental units that are market-rate or just below market rate in the community. The median gross rent for the Bridgeville-Greenwood area is $817 a month, according to the US Census Bureau.

The affordability chart (Figure 3.4) on page 18 indicates that the Bridgeville-Greenwood area has a higher rate of homeowners (34.4%) struggling with their mortgages than Delaware and Sussex County as a whole. According to the Delaware State Housing Authority, housing costs that exceed 30 percent of monthly income are considered burdensome. Also the U.S. Census statistics show that almost 41 percent of renters in the Bridgeville-Greenwood area spend 35 percent or more of their monthly household income on rent.

An infill strategy

In Bridgeville especially, there are vacant lots that could be converted into condominiums or market-rate apartments. Knowledge of changing demographics and a creative marketing strategy could bring new residents into the core of town. New residents who could walk or bike to the library and Main and Market streets would benefit local businesses and encourage the startup of new ones.

Another strategy for creating more affordable opportunities to live downtown is permitting Accessory Dwelling Units (ADUs), with prescriptive design guidelines so they would fit in the historic areas of town. Some examples are shown on page 19.



Housing Snapshot: Comparison of home values

Figure 3.2	Delaware		Sussex County		Bridgeville-Greenwood	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Owner-occupied units	242,808	100.0	60,159	100.0	2,839	100.0
Less than $50,000	15,057	6.2	5,683	9.4	318	11.2
$50,000 to $99,999	9,697	4.0	3,998	6.6	152	5.4
$100,000 to $149,999	19,777	8.1	4,745	7.9	328	11.6
$150,000 to $199,999	38,740	16.0	7,832	13.0	574	20.2
$200,000 to $299,999	76,740	31.5	15,143	25.2	883	31.1
$300,000 to $499,999	62,755	25.8	14,204	23.6	464	16.3
$500,000 to $999,999	16,414	6.8	6,363	10.6	82	2.9
$1 million or more	3,898	1.6	2,191	3.6	38	1.3
Median	**$244,100**		**$246,900**		**$204,700**	

Source: *US Census Bureau American Community Survey 2008-2012 Five-Year Estimates for Bridgeville-Greenwood Census County Division. Note: To simplify table, margins of error were omitted. Margins of error tend to grow as the sample size decreases. Full tables appear in Appendix C.*

Figure 3-3: Subsidized rental units in Bridgeville/Greenwood area

Place	Location	Town	Units	Program
Canterbury Apartments	304 Canterbury Lane	Bridgeville	24	USDA RD, HDF, LIHTC
Elizabeth Cornish Landing Annex	100 Elizabeth Cornish Lane	Bridgeville	12	USDA RD, HDF, LIHTC
Elizabeth Cornish Landing Apts.	100 Elizabeth Cornish Lane	Bridgeville	34	USDA RD
Elizabeth Cornish Landing II	100 Elizabeth Cornish Lane	Bridgeville	16	USDA RD
Greenwood Acres	5 Greenwood Acres Drive	Greenwood	28	USDA RD
Market Street Apartments	310 Market Street	Bridgeville	34	USDA RD, LIHTC
Laverty Lane	1 Laverty Lane	Bridgeville	50	Public Housing
TOTAL UNITS			198	

Abbreviations: *US Department of Agriculture Rural Development, Housing Development Fund (state), Low-Income Housing Tax Credit.* ***Source:*** *Delaware State Housing Authority*

According to the Delaware State Housing Authority, "ADUs are independent housing units created within single-family homes or on their lots. An ADU can provide supplementary housing that can be integrated into existing single-family neighborhoods to provide a typically lower priced housing alternative with little or no negative impact on the character of the neighborhood.

"Furthermore, ADUs can provide homeowners with a means of obtaining, through tenants, in the ADU or the principal unit, rental income, companionship, security and services."[1]

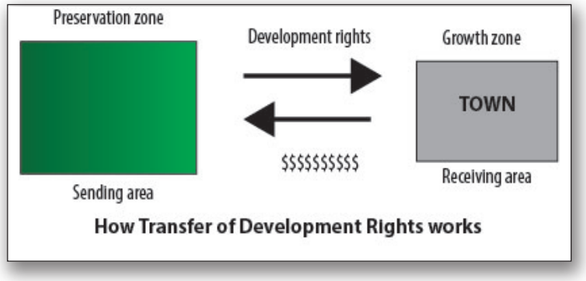
Bridgeville offers a much lower sewer impact fee for infill residential development – $1,080 vs. $6,000 for non-infill. This could be an additional incentive to build in the established downtown area.

Transfer of Development Rights

Transfer of Development Rights is a strategy for preserving agricultural or other open lands while enabling more compact, town-like development in communities where it is appropriate. The owner of the preserved parcel is paid for his or her development rights, which are transferred into a "receiving area" where additional density is permitted. Town-like density holds down the costs of infrastructure and other municipal services; it also can create a more walkable, convenient and complete community.

Likely candidates for sending areas could be parcels surrounding the new Woodbridge High School, where residential development is not desired, or other farms that would help create a "green" buffer around the towns.

The receiving area could be the Baldwin property, facilitating a master-planned community of mixed housing types that connects to the town. Another possibility is increasing floor-to-area ratio (FAR) in the commercial corridor along US 13, where infrastructure already is in place.



A TDR ordinance would have to be carefully crafted and base density set at a level that creates the demand for the purchase and transfer of development rights.

Residential Planned Communities

Both towns should have Residential Planned Community (RPC) ordinances that proactively tell a prospective developer what is expected in terms of uses, connectivity, walkability, architectural standards, street widths, alleys, lot sizes and other features. Because of the possibility that towns in the Chesapeake watershed may have to offset any net new nutrient loads from development, the RPC also should provide guidance on low-impact stormwater design, setbacks from water bodies, open space, native plantings, percentage of impervious cover, and other environmental best practices.

1 "Accessory Dwelling Units, a Practical Option to Promote Affordability," 2010, Delaware State Housing Authority.

Housing affordability	Delaware		Sussex County		Bridgeville-Greenwood	
Figure 3.4	*Estimate*	*Percent*	*Estimate*	*Percent*	*Estimate*	*Percent*
Selected monthly owner costs as a percentage of household income (SMOCAPI)						
Housing units with a mortgage	169,246		35,359		1,804	
Less than 20 percent	59,941	35.4%	11,396	32.2%	589	32.6%
20.0 to 24.9 percent	27,688	16.4%	5,163	14.6%	264	14.6%
25.0 to 29.9 percent	21,874	12.9%	4,452	12.6%	142	7.9%
30.0 to 34.9 percent	14,373	8.5%	3,102	8.8%	189	10.5%
35.0 percent or more	45,370	26.8%	11,246	31.8%	620	34.4%
Gross rent as a percentage of household income - occupied units paying rent	85,254		13,803		801	
Less than 15 percent	9,523	11.2%	1,467	10.6%	156	19.5%
15.0 to 19.9 percent	10,434	12.2%	1,384	10.0%	63	7.9%
20.0 to 24.9 percent	10,423	12.2%	1,821	13.2%	88	11.0%
25.0 to 29.9 percent	10,341	12.1%	1,821	13.2%	107	13.4%
30.0 to 34.9 percent	8,395	9.8%	1,241	9.0%	61	7.6%
35.0 percent or more	36,138	42.4%	6,069	44.0%	326	40.7%

Source: *US Census Bureau American Community Survey 2008-2012 Five-Year Estimates for Bridgeville-Greenwood Census County Division. Note: To simply table, margins of error were omitted. Margins of error tend to grow as sample size decreases. Full tables appear in the Appendix.*

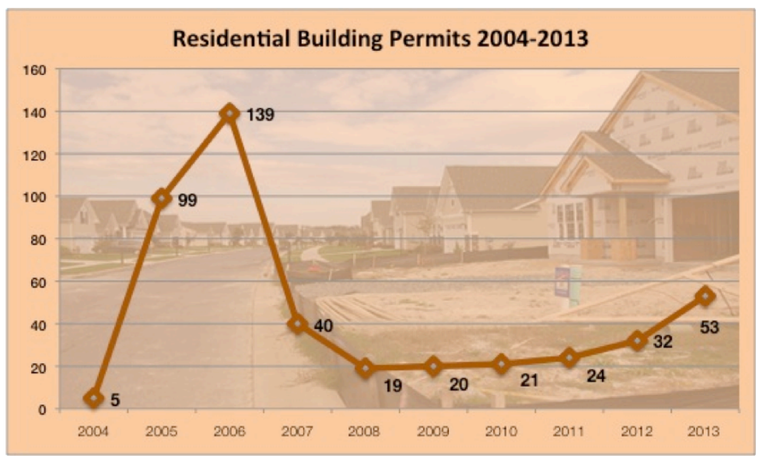
More guidance on RPCs is provided in the Implementation section. While some of these new proposed standards may sound demanding, they can also provide potential developers with transparency, consistency and regulatory flexibility within the RPC framework. They also make a statement about the expectations of the community and set a higher standard for attractive residential and mixed-use development.

Consider annexation standards

Towns should be prepared for annexations by ensuring that they meet the Master Plan's guiding principles and objectives.

They should set standards relating to connectivity with the town, street grids rather than a colony of cul-de-sacs, and the planned provision and financing of municipal services such as water, wastewater, police and fire.

Because residential-only development can have an adverse impact on revenues, towns should consider requiring a fiscal impact analysis before permitting an annexation that is planned for purposes of large residential development.



Source: *Town of Bridgeville. The numbers tell the story of the recession's effect on residential construction in the area. Housing starts are growing again, mostly in Heritage Shores.*

Figure 3.4

An annexation for mixed-use or commercial purposes would not necessarily require such a study because they generate more in revenues than they consume in services. *See box at right.*

Examples of Accessory Dwelling units that would complement the architectural styles of Bridgeville and Greenwood.

Can towns afford residential-only development? Not really.

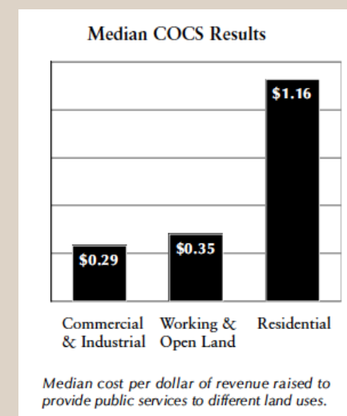
Studies across the country have demonstrated that stand-alone residential development does not pay for itself — its residents require more in government services and infrastructure than they pay in taxes, fees and other revenues.

These Cost of Community Services studies collect data on local revenues and expenditures; allocate those revenues and expenditures to a community's major land-use categories; and analyze that data to calculate revenue-to-expenditure ratios for each land use category.

The median outcome of all studies: Working and open lands only require 35 cents in government services for every $1 they generate in revenues; commercial and industrial lands require 29 cents in government services for every $1 they generate in revenues. But residential development requires $1.16 in services and infrastructure for every $1 generated in revenues.

Towns should seek infill and mixed-use development projects with more than temporary construction employment so they (and the state) do not wind up paying more for growth than they generate in revenues from it.

After all, towns are incorporated in order to provide a range of services and land uses to all its residents, businesses and visitors.



Source: *American Farmland Trust*

4. Water Quality and the Environment

One of the driving forces behind this Master Plan is the adoption of much stricter water quality standards for nitrogen, phosphorous and sediment (nutrients) in the Chesapeake Bay Watershed. Roughly half of Sussex County and a third of Delaware's land area lie within this watershed.

In essence, the watershed is on a "pollution diet," called Total Maximum Daily Load (TMDL), limiting additional nutrient pollution from entering the Chesapeake Bay and its tributaries – which includes the Nanticoke River and streams such as Bridgeville Branch. Base allotments of nitrogen, phosphorous and sediment have been established for each Chesapeake state.

Before the Chesapeake-wide TMDL, Delaware already had developed its own water pollution limits for the subwatersheds shown in the map on page 21. The federal Clean Water Act requires states to develop these limits for surface waters that are "impaired" or polluted and not fit for fishing, swimming or other uses.

In the Master Plan study area, the Nanticoke River, Grubby Neck Branch, Bridgeville Branch and Clear Brook are designated as impaired. *See maps on page 23 of this section.*

States have developed detailed roadmaps that demonstrate how they plan to implement strategies that will achieve pollution goals for the watershed by 2025. Sixty percent of those strategies must be in place by 2017. Delaware's Watershed Implementation Plan was approved by EPA in 2012.[1]

1 Delaware's Phase 2 Chesapeake Bay Watershed Implementation Plan, March 2012, Chesapeake Interagency Workgroup.

The directives from the US Environmental Protection Agency and the Delaware Department of Natural Resources and Environmental affect the towns of Bridgeville and Greenwood in two ways:

1) Bridgeville's aging wastewater treatment plant, which serves both towns, faces new stream discharge limits less than half of what they have been – from 19,313 pounds per year of total nitrogen and 4,909 pounds per total phosphorous to 9,747 pounds of total nitrogen and 2,436 pounds of total phosphorous per year. The town's new discharge permit, issued by DNREC in Spring 2014, gives the town 5 years to meet the new limits.

2) Net new nutrient loads from development and other "nonpoint" sources such as fertilizers, stormwater runoff, and other agricultural practices are expected to be offset so there is no increase in nutrients entering the watershed. No offset program has been developed as of July 2014, but this Master Plan lays out several strategies for avoiding or offsetting net new loads of nitrogen, phosphorous and sediment.

Point source: Bridgeville's Treatment Plant

The Bridgeville Wastewater Treatment Plant is one of four point sources in Sussex County that discharge directly into tributaries of the Nanticoke. The Town currently discharges its effluent to the Nanticoke River by either stream discharge (Bridgeville Branch) or land application at Bridgeville Farms, the Town's spray irrigation site located on Oak Road.

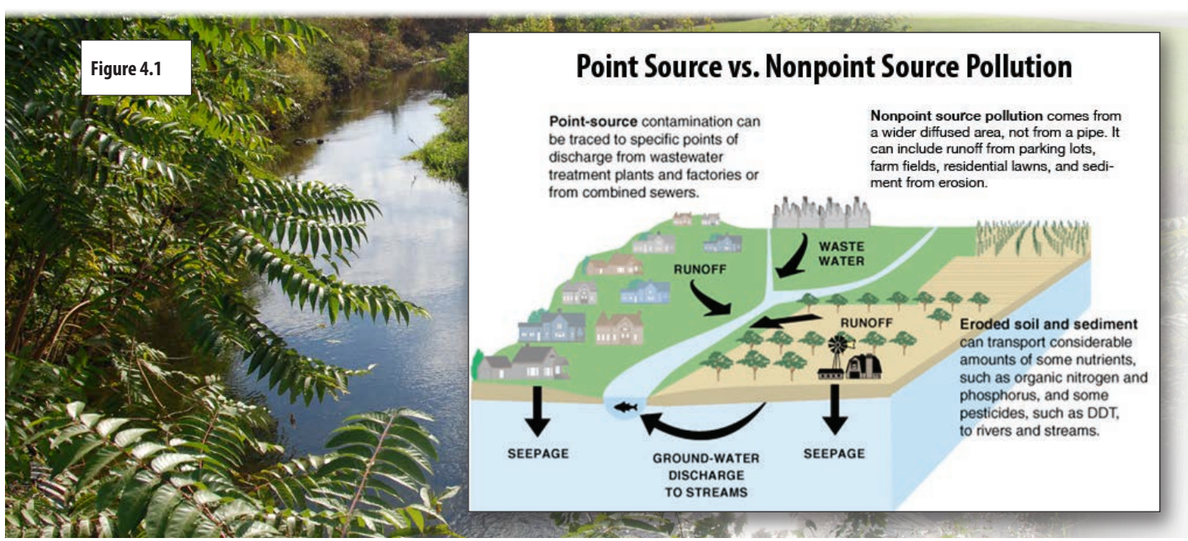


Figure 4.1

The plant currently has a permitted flow of 800,000 gallons a day. But because of stream discharge limits, the plant is effectively near capacity, according to a Wastewater Facility Plan update prepared by Davis Bowen and Friedel Inc. in October 2013:

"The existing wastewater treatment plant is an aged plant that has exceeded its life expectancy. This is evident by high maintenance costs as well as the continual deterioration of structures and processes. In addition, the existing treatment process is not capable of meeting the stream discharge limits as stated in the Town's new stream discharge permit. The existing wastewater treatment plant and current disposal method equates to the Town being at 96% capacity."[2]

The average nitrogen effluent at the existing plant is 30 milligrams per liter, while the new Chesapeake standard is set at 4 mg/l. The DBF study extensively reviewed several treatment options and recommends the plant be upgraded to a Modified Lugzack Ettinger (MLE) technology that removes significantly more nitrogen from the effluent, down to 8 mg/l.

"Calculations show that the Town can operate effectively at 10mg/l of total nitrogen within its effluent with full utilization of spray irrigation and/or stream discharge," the DBF study states on page 10. With spray irrigation, uptake of the nutrients by crops would enable the town to meet the much tougher discharge limits of its new permit.

2 "Town of Bridgeville Wastewater Facility Plan Update," October 2013, prepared by Davis, Bowen and Friedel Inc., page 1.

Within a few years, Bridgeville would need to find an additional 150 acres for spray to meet its permitted flow of 800,000 gallons a day. If the plant capacity were upgraded in the future to 1.6 million gallons a day, the Town would need to find an additional 493 acres for spray (in addition to the 150 acres).

Currently, one-third of the plant effluent is discharged into the Nanticoke tributary and two-thirds goes to the spray field; the Town would like to increase the percentage of land application to reduce stream discharge.

The table (Figure 4.3) on page 22 is derived from the DBF study, with some modifications for a significant parcel originally slated for 1,800 EDUs. As of January 2014, the property (Wheatley farm south of Heritage Shores) was accepted in Round 18 of the Department of Agriculture's Purchase of Development Rights program and will be out of play.

Additional treatment technologies reviewed

DBF also reviewed an enhanced nutrient removal (ENR) technology, Four-Stage Bardenpho, which reduces nitrogen in the effluent to 4 mg/l – meeting the state requirement. This technology would require the city to purchase less land for spray irrigation, but DBF notes there would be increased capital costs above the $9 million estimated for the MLE system (the study does not delineate those costs).

If the Town upgraded to the MLE technology as recommended, the DBF study points out that a denitrification/phosphorous removal filter could be added to improve the level of treatment

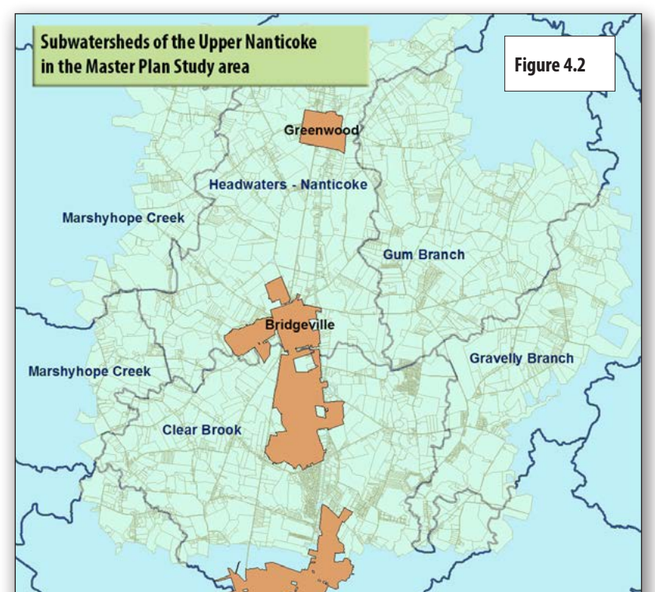


Figure 4.2

The study area includes four subwatersheds of the Upper Nanticoke: Headwaters, Gum Branch, Gravelly Branch and Marshyhope Creek.

The predominant land use in the area is agriculture. For context, Bridgeville and Greenwood's combined 2010 baseline urban load for nitrogen is ***8,054 pounds — about .19 percent (less than 2/10ths of 1 percent)*** *of Delaware's baseline load of 4,331,600 pounds of nitrogen.*

Proposed annexation, infill and existing service areas			
Figure 4.3	Annexed property	Number of EDUs	Average wastewater flow 200 gallons/EDU
Bridgeville existing	n/a	1,310	279,000
Bridgeville infill	yes	43	8,000
Heritage Shore	yes	2,000	400,000
Passwaters commercial	yes	134	26,800
Bridgeville Park Center	no	66	13,200
Highway One Banquet & Hotel	yes	50	10,000
Additional from Greenwood	no	402	100,500
Lower Bridgeville School	no	11	2,200
Lindemere/Baldwin Farm	yes	1,866	373,200
Gateway Farr Commercial	yes	108	21,600
Beach Commercial Realty	yes	11	2,200
DMC/Tull Group LLC	yes	11	2,200
Warren and Smith	no	545	109,000
Miller Furniture	yes	40	8,000
Hunsberger	yes	154	30,800
Sylvia Motel Commercial	yes	27	5,400
Town Square Bariglio Commercial	yes	187	37,400
Highway One 90 Ac Commercial	yes	334	66,800
Sussex Realty Residential	no	400	80,000
Bridgeville Professional Center	yes	1	200
Bridgeville Commons Phase 1	yes	66	13,200
Bridgeville Commons Phase 2	yes	92	78,400
Total		**8,158**	
Average Daily Flow (gpd)			**1,668,700**

Source: *"Town of Bridgeville Wastewater Facility Plan Update," October 2013, Davis Bowen and Friedel Inc. Chart on report's page 6 was adapted to reflect one property (Wheatley) farm going into permanent agricultural easement, resulting in 1,800 fewer Equivalent Dwelling Units (EDUs).*

This chart, from the DBF Wastewater Report of October 2013, reflects all known commercial and residential development projects within the Bridgeville wastewater service area.

Some projects, such as Lindenmere, have been sunsetted and the zoning reverted to agricultural. However, this Master Plan still envisions that property being developed as a town-like subdivision of mixed housing types.

Likewise, while many of the listed commercial projects are stalled, in most cases the transportation infrastructure is in place, and this plan envisions those or similar projects building out over time.

to ENR. This enhanced evel of treatment would be required anyway if the town increasd its permitted flow beyond 1.6 million gallons a day because of the lack of available land for spray, according to the study.

Upgrading the plant to the MLE technology is estimated to cost $9 million – not including the purchase of land for additional spray irrigation. The Town is carrying $5 million in debt from the original construction of the plant (a 40-year loan) and subsequent repairs and upgrades.

In addition, the Town is planning to borrow up to $1.2 million to make water infrastructure upgrades recommended in another DBF study (see page 26). The Town is very concerned about the additional financial burden on ratepayers and how such a project can be funded.

The Town's National Pollutant Discharge Elimination System (NPDES) permit expired in January 2012. The Town has five years to comply with the drastically reduced Waste Load Allocation (WLA) in its new permit, issued in March 2014.

The Chesapeake Watershed Implementation Plan notes the following on page 55:

> "Future growth for Bridgeville can be accommodated within the proposed loads though plant upgrades and/or increasing the amount land applied effluent.
>
> "Although the Bridgeville facility currently exceeds the proposed loads for TN (Total Nitrogen), the Department is committed to working with the Town to find solutions to meet allocated loads through the NPDES permit process.
>
> The Town is currently reviewing several options to identify realistic and obtainable ways to meet the WLA. The Town and the Department are committed towards working together to find a solution."

Offset of nonpoint sources

Delaware's Watershed Implementation Plan (WIP) for the Chesapeake calls for the offset of all net new nutrient loads from nonpoint sources., such as new residential and commercial development.

Quoting from the WIP (page 140):

> "EPA definition of offset: Compensating for the loading of a pollutant of concern from a point or nonpoint source with a reduction in the loading from a different source or sources, in a manner consistent with meeting water quality standards."

The document continues:

> "Delaware recognizes that in order to accommodate new or increased loadings of nitrogen, phosphorous, or sediment in this watershed, a mechanism that allows for quantifiable and accountable offsets of that new or increased load is necessary.
>
> "The State intends to offset future nutrient loads from lands proposed for development through a combination of
>
> a) Revised statewide stormwater regulations that are focused on water quantity but also achieve Chesapeake TMDL goals under a variety of development scenarios;
>
> b) A stormwater in-lieu fee to be applied if site constraints prevent the achievement of water quantity/quality goals on a specific parcel; and
>
> c) Providing an option that enables the offsetting of residual nutrient loads (including from onsite wastewater disposal) on another site within the same basin."

To date, Chesapeake states have focused almost exclusively on offsetting point sources—e.g., in order to upgrade or build a

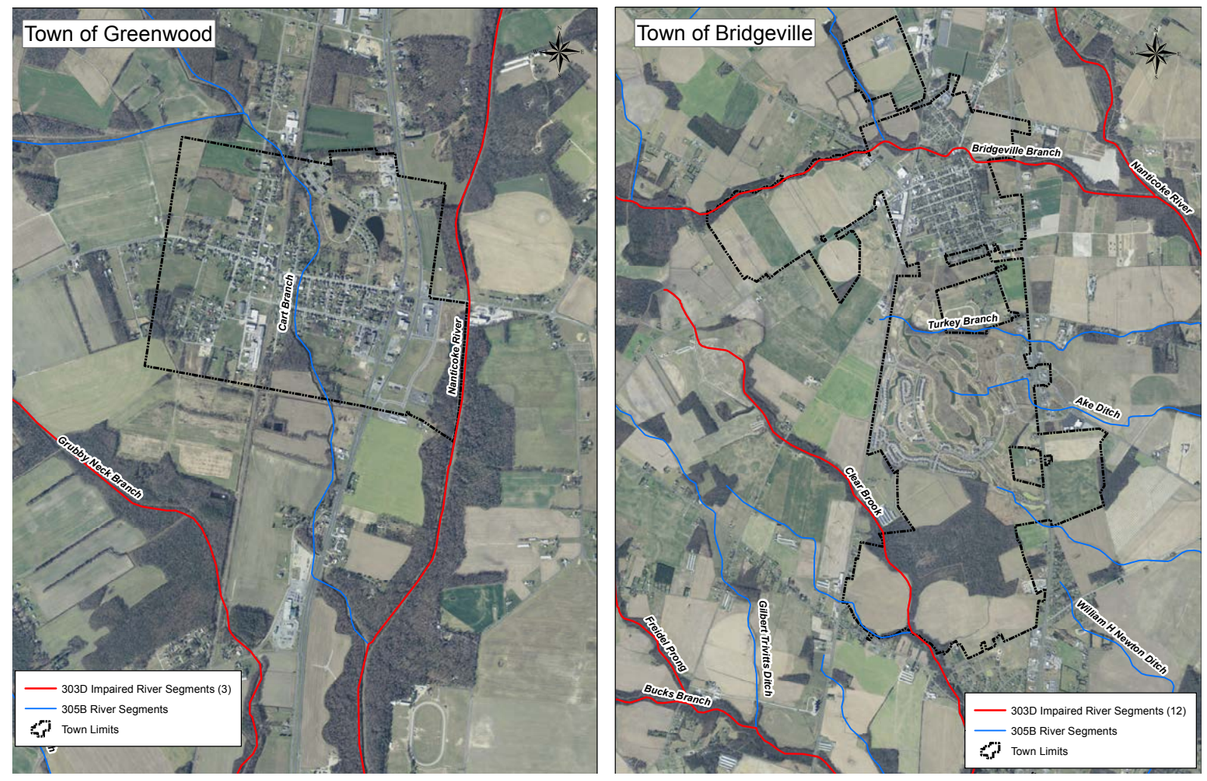


Figure 4.4 *The surface waters shown in red are designated as "impaired" or polluted under the federal Clean Water Act Section and are listed as 303(d) segments according to that section of the act. The waters shown in blue are not considered polluted. States are required to develop specific pollutant limits, or Total Maximum Daily Loads (TMDL), for each impaired segment.*

new wastewater plant, a jurisdiction must locate and obtain excess credits from another plant or jurisdiction. DNREC is contemplating a program that offsets nonpoint sources—specifically, from residential and commercial development, as well as agriculture.

Clarification for offset program needed

Before an offset program can be required of Bridgeville, Greenwood or any other town, the municipalities need the following information and resources:

- Clarification of the regulatory basis for an offset requirement;
- An offset mechanism, such as a bank, so transactions are transparent and officially recorded and credited;
- A thoroughly tested, vetted and user-friendly protocol for determining pre- and post-development nutrient loads;
- An official list of best management practices (BMPs) that can be used as offsets—e.g., stream restoration, street sweeping, stormwater retrofits, forested buffers, etc. —and their associated nutrient-reduction values;
- Agreement on the baseline and nutrient reduction goals for both urban and agricultural loads within a jurisdiction, and whether the municipality is required to offset both loads or just the urban load. The most current base and target loads calculated for Bridgeville and Greenwood are in the table below.

Strategies for limiting future offsets

The established baseline for nitrogen, phosphorous and sediment loads was set in December 2010. Any new development hence that creates net new pollutant loads must be offset—and further load reductions must be achieved.

While meeting the new (as of January 2014) state sediment and stormwater regulations will enable new development to meet the TMDL in most cases without requiring an in-lieu fee or offset, Heritage Shores is grandfathered under the previous stormwater regulations. As such, it is DNREC's position that any new development in Heritage Shores after 2010 must be offset by the Town.

By adopting this Master Plan, Bridgeville and Greenwood will commit to strategies that significantly limit net new loads of nitrogen, phosphorous and sediment into the watershed. Studies have shown that more compact, town-like development generates less impervious surface and is less detrimental to water quality than low-density, large-lot residential development.[3]

In the Implementation section, this Master Plan offers several specific recommendations for proactively avoiding the need for an offset. The strategies represent best management practices and planning tools that also create more attractive and livable communities and towns.

Generally, the following strategies are often recommended for protecting water quality:

- Preserve large, continuous areas of absorbent open space;
- Preserve critical ecological areas, such as wetlands, floodplains, and riparian corridors; and
- Minimize overall land disturbance and impervious surface associated with development.[4]

3 "Protecting Water Resources with Higher-Density Development," January 2006, Office of Sustainable Communities, US Environmental Protection Agency.
4 Ibid.

If this Master Plan is followed, and growth is directed into the Towns of Bridgeville and Greenwood, there would be 86 percent fewer septic systems in the plan's study area at full buildout. Acreage in the base county zoning of 2 units per acre drops from 16,400 acres to 1,100 acres. Many more land uses would be on central wastewater under the Master Plan.

Water quality benefit of Bridgeville-Greenwood Master Plan	Default/existing comprehensive plans	Proposed Master Plan
Projected number of septic systems	23,028	3,261
Gallons per day (x190)	4,375,320	619,685
x24.12 lbs per year of nitrogen per septic system*	560,041	79,320
Estimated load that arrives at edge of stream (50%)*	280,020 pounds	39,660 pounds
% reduction with Master Plan		**86%**

Figure 4.5 ** According to the Maryland Department of the Environment, the average household septic system generates 24.12 pounds per year of nitrogen, and it is estimated that 50% of that amount arrives at edge of stream. The nitrogen load from a septic system is estimated at 60 milligrams/liter, while Bridgeville's wastewater treatment system (when upgraded) will treat to 8 mg/l followed by spray and uptake by crops.*

Bridgeville and Greenwood can accomplish these strategies by several means:

A. Septic system avoidance or elimination

Successful implementation of this plan over time will direct growth to areas served by central wastewater. Bridgeville, with an upgrade of its plant, will be treating effluent to a level of at least 8-10 mg/l of nitrogen, followed by spray application and uptake by crops. The effluent of individual septic systems contains an estimated 50-60 mg/l of nitrogen.

An analysis of current and proposed land uses estimates that this Master Plan projects 89 percent fewer septic systems than the current town and county comprehensive plans (*see Figure 4.5*).

Additionally, both towns can take steps to eliminate septic systems on lots that are in the town or located within enclaves surrounded by the town.

B. Tree canopy and streamside buffers

In Bridgeville, the WIP calculated that there are about 285 acres of land that fall within 100 feet of a stream (within a riparian buffer). Of that acreage, about 78 acres—or 27 percent – is forested.

In Greenwood, about 45 acres falls within 100 feet of a water body; 11.1 acres, or 25 percent, is forested.

This stream runs along the north end of the Baldwin farm, the former site of the Lindenmere residential subdivision. If the property is developed as the Master Plan anticipates, plans should buffer the stream, perhaps perform some restoration, and create an amenity such as a walking trail for future residents.

Removing trees and conversion of forested areas to development, especially within 100 feet of a stream or wetland, has a high negative impact on nutrient pollution. Headwater forests, large forest tracts and corridor and riparian buffers are considered top priorities for protection and restoration, according to the WIP.

As this Master Plan is implemented, taking steps to leave these areas intact will significantly reduce any future need for an offset. Also, the Towns and DNREC should partner to identify restoration projects within the Master Plan Area. Restoration projects are relatively much less expensive than urban stormwater retrofits.

The Wheatley parcels at the southern edge of Bridgeville were once slated for 1,800 units. The parcels include a large 305-acre block of forest. Those parcels were accepted into the Department of Agriculture's permanent easement program in January 2014 and are now out of play. The area south of Heritage Shores to the town's southern boundary is now an extensive green buffer with forested habitat that will never be converted to development. See all permanent agricultural easements in the study area on page 29.

With the consent of the landowner, this acreage could potentially serve as a huge offset bank—best management practices such as cover crops and forest restoration could be credited to Bridgeville.

Greenwood shows a potential future development area straddling Cart Branch on the northwest side of town. The northern side of Cart Branch is forested. Any future development in this area would require significant offsets because of the stream and the conversion of forest to urban land uses.

B. Restoration of streams, wetlands and wooded areas

Returning streams, wetlands and woods to a more natural function improves water quality. Techniques such as removing invasive species, reconnecting a channelized stream to its floodplain, planting native trees and other vegetation, and improving stream flows to reduce algae or prevent erosion are relatively inexpensive compared to retrofits of stormwater and other "gray" infrastructure and waterwater plant upgrades.

Both Bridgeville and Greenwood have ongoing restoration projects that will help meet water quality goals. *See page 26.*

C. Street Sweeping

Bridgeville has a street sweeping program, a best management practice that prevents debris and other pollutants

Restoration projects benefit water quality and citizens

Restoring the natural functions of streams, wetlands and woods improves water quality. Such projects also benefit citizens by reducing flooding and erosion and creating more attractive green spaces to enjoy. Two such projects are underway in Greenwood and Bridgeville:

Restoration work in Brenda Jones Park, Greenwood

- The Town of Greenwood was awarded $35,000 to restore a buffer of native vegetation along 1,000 feet of the **Cart Branch Tax Ditch,** which drains into the headwaters of the Nanticoke River. Located within the heart of the community in the Brenda Jones Park, the restoration project will reduce stormwater runoff from two large industrial buildings, as well as the Park and will establish more than ½ acre of new floodplain and buffer habitat. Within walking distance of the Woodbridge Elementary School, the improvements expand outdoor educational programs for the community's children. Greenwood was awarded federal funding by providing $67,500 in in-kind technical services and cash from local partners.
- The **Bridgeville Branch Tax Ditch** was constructed in 1964 and has an approximate drainage area of 5,600 acres with roughly 24 miles of ditch; it is considered headwaters to the Nanticoke River. DNREC is focusing initial restorative efforts within the section located between North Cannon and North Main Streets. This 1,600 linear feet stretch of ditch displays significant evidence of channel bank and bed erosion. DNREC's goal is to implement natural channel design techniques to manage vertical and lateral migration and protect the utilities crossing the tax ditch. These techniques include in-channel structures to decrease bank shear stress and protect utilities, create an accessible flood plain for frequent storm events and sediment buildup, and the addition of riffle sections to provide increased in-stream habitat. Estimated cost is $500,000.

from entering the watershed. Greenwood is expected to have a program online in 2014. Any protocol developed by DNREC should be able to quantify the load-reduction benefits of this practice, so the Town can receive credit for it.

D. Impervious surfaces and Source Water Protection Ordinance

Paved surfaces such as roads and parking lots, rooftops, driveways cannot absorb rainfall. As the percentage of these impervious surfaces grows within a watershed, the potential for flooding and water pollution from runoff increases.

The buildout analysis performed by the University of Delaware for this Master Plan demonstrates an impervious cover percentage of 29.5 percent within the Master Plan area vs. 75.8 percent if there were total buildout of the existing Sussex, Bridgeville and Greenwood comprehensive plans (see Figure 2.7, page 12). While any percentage above 10-15 percent can affect water quality, 29.5 percent represents a significant improvement over the existing, default growth scenario.

Bridgeville's population surpassed 2,000 with the 2010 Census, and the Town recognizes the statutory requirement for a Source Water Protection Ordinance that will further protect wellheads and water recharge areas. (Delaware Code Title 7, §6082). Adopting a protective ordinance also will address water quality by limiting the spread of impervious cover and allowing for infiltration of cleaner water to recharge areas.

Figure 4.6 on the adjacent page shows the environmental assets contained within the Master Plan Study Area.

Bridgeville's water infrastructure

The current water system permitted allocation by the State of Delaware is 540,000 gallons per day; 16,200,000 gallons per month; and 98,000,000 gallons per year.[5]

According to a 2012 water infrastructure study completed for Bridgeville by Davis, Bowen and Friedel Inc., it is understood

5 "Town of Bridgeville Water Facility Plan Update," November 2012, Davis, Bowen and Friedel Inc.

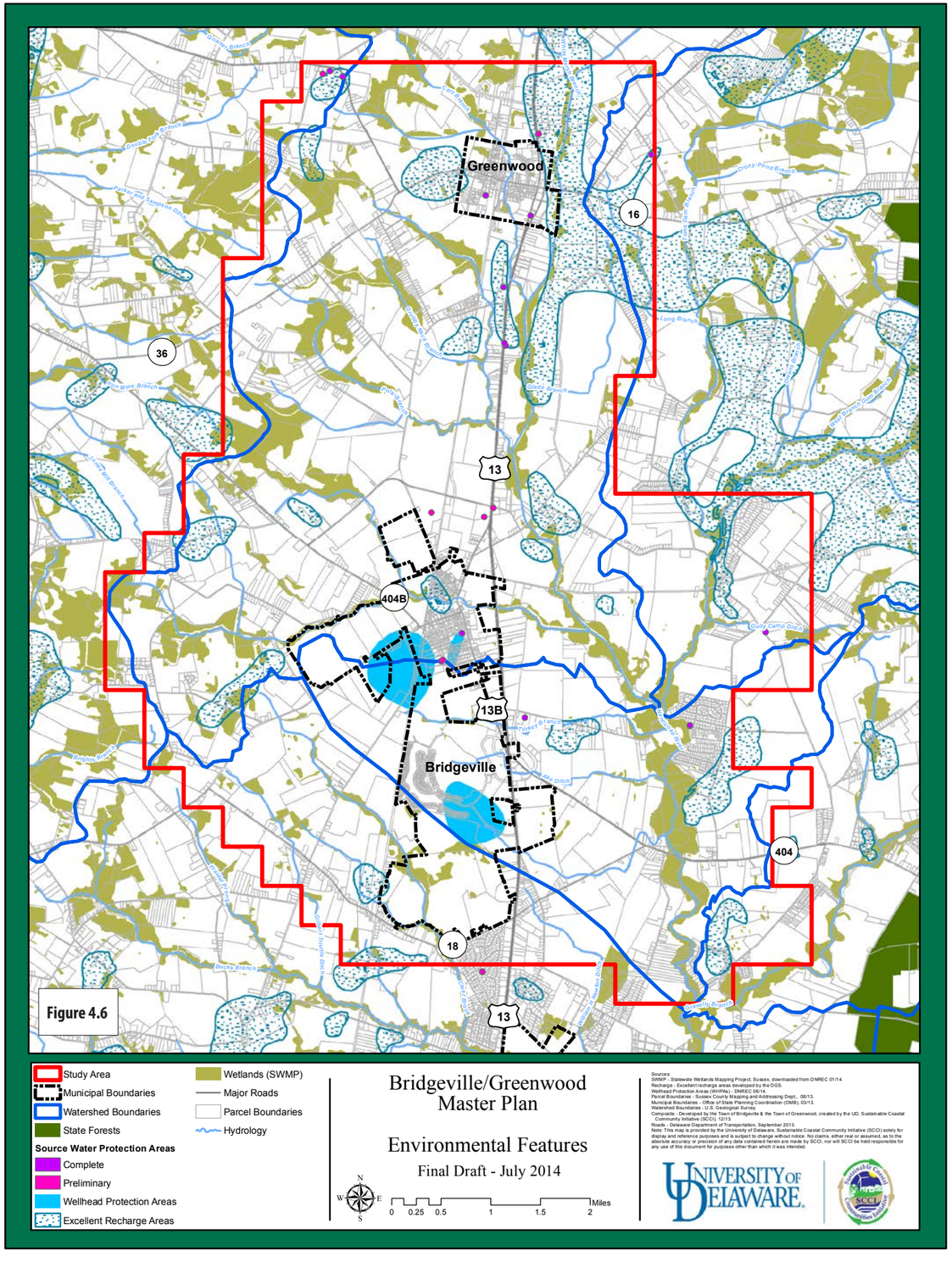


Figure 4.6

that this allocation is to remain in place until the need arises for greater flow volumes. At that point, the state will consider a higher volume of groundwater withdrawal.

The current corresponding average usage is 241,847 gallons per day, 7,456,200 gallons per month, and 88,274,000 gallons per year.

The study suggested the Town will need to submit an allocation increase request in the near future because there are currently less than 100 EDUs of capacity remaining on the current allocation.

Bridgeville has kept up with growth by updating and maintaining its system. The system improvements that have occurred since the completion of the 2008 Water Facility Plan II and 2009 addendum are as follows:

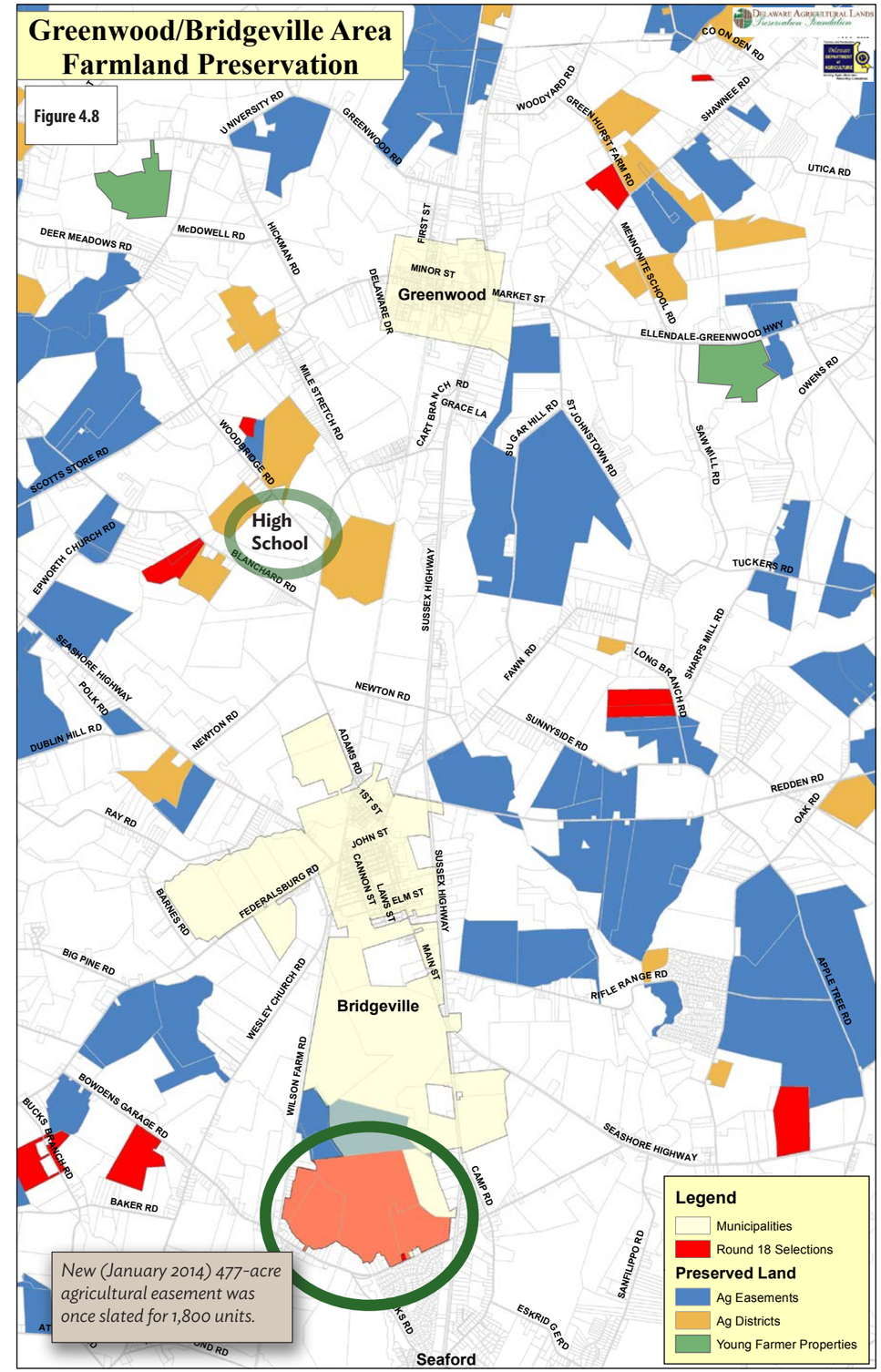
- Water Main Extensions (2008) - In 2008 a 12", 2,087 foot long water main was installed on Route 404 from a location just south of Rifle Range Road to the Royal Farms site at the intersection of Routes 13 and 404. This water main was installed on the east side of the original alignment of Route 404 (prior to theDelDOT intersection improvements in 2008) and terminates on the east side of Route 13 and north side of Route 404 to service the Royal Farms site. The water main was installed with the intent to accommodate other residential and commercial properties along Route 404 as well.
- Water Main Extensions (2011) - In 2011 a 10", 380 foot long water main was installed on Antique Alley from Route 404 to the recently constructed Bridgeville Professional Center site. This water main was constructed to service the Professional Center Building but could be extended for future development in the immediate vicinity as well.
- Backup Well #6 - A new well was installed adjacent to existing Well #6 within the Heritage Shores subdivision. This well is controlled by the equipment within Well Building #6 and has the similar capacity of Well #6, 725 gpm. This new well is on the same electrical and control system as well as generator as Well #6 which only allows for one of the two wells to operate at any given time. This well was completed and put into operation in 2010. The purpose of this project was to have a backup well for the largest product well operated by the Town.
- Wells #2, #2D, #5D, and #5F Improvements - In 2012, with the assistance of an American Recovery and Reinvestment Act (ARRA) grant through the Department of Energy, the Town completed energy efficient upgrades to these wells. New energy efficient pumps and motors were installed at each of these wells along with an automatic transfer switch and variable frequency drive at Well #2D.
- Well #5F Redevelopment – During the above mentioned energy project it was discovered that Well #5F efficiency had decreased tremendously. Therefore, the well was redeveloped to restore its original well efficiency.
- Radio Read Water Meters – Over the past few years approximately 800 radio read water meters were installed to provide more efficient meter reading. This recent project was the beginning of Town efforts to replace all manual read water meters within the Town with radio read water

Projected buildout for Bridgeville's Water System

Existing and Annexed Properties	Water at 270 gpd/EDU
Bridgeville infill and existing	1,381
Heritage Shores	2,000
Heritage Shores Golf Course	16
Passwater's Commercial	134
Bridgeville Mall (wastewater only)	0
Bridgeville Park Center (wastewater only)	0
Highway One Hotel	50
Greenwood (wastewater only)	0
Gateway Farr Commercial	108
Beach Commercial Realty	11
Tull Group LLC	11
Miller Furniture	40
Hunsberger	154
Sylvia Motel Commercial	27
Town Square Bariglio Commercial	187
Reynolds Farm 90 Acre Commercial	334
Bridgeville Commons Phase I	66
Bridgeville Commons Phase II	392
Bridgeville Professional Center	1
Total	**4,912**
Average Daily Flow (gallons per day)	**1,326,240**

Source: *DBF Water Facility Plan, 2012*

Figure 4.7



meters to reduce the hours of meter reading for significant improvement of operational efficiency.

Water treatment and quality

As the DBF study notes, Bridgeville does not require an advanced water treatment plant in order to provide high quality water for its users. Current treatment is pH adjustment and corrosion inhibitor for the unconfined wells in the Columbia aquifer, along with disinfection and fluoride for all wells. Each well building (total of three) houses its own treatment systems sufficient to provide the necessary treatment for two wells (total of six).

The use of unconfined wells is prevalent in the area. However, DBF notes that agricultural land use creates a relatively high risk of nitrate contamination, as experienced in Well No. 2, with shallower wells. Well No. 6 and Backup Well No. 6 are located near a large wooded area which has resulted in low nitrates within its source water.

"The use of deeper wells in the area typically yields lower quantity with somewhat elevated mineral content," the DBF study states. "The mixing of well water is required to find a balance between the desire for a high quantity of water available in shallow aquifers, with potentially high nitrates, and the lower quantity available from deeper aquifers with less risk of surface contamination. This mixing scenario using a combination of deep and shallow wells allows the water to meet standards and avoids the need for special treatment of the well water to remove nitrates and/or minerals."

The DBF study made 14 recommendations, of which four priority items require capital investment outside of the Town's operating budget. Bridgeville recently approved obtaining a loan for up to $1.2 million for the improvements which include:

- Insulation in Well Buildings 2 and 5 to improve energy efficiency;
- Upgrade the alarm system that notifies Town staff of concerns with the wells, storage tanks, and treatment systems;
- Replace approximately 800 service meters with radio read meters to improve staff efficiency and allow staff time for other priorities such as hydrant testing and water main flushing; and
- Replace the aged and deteriorated 4" water main in Walnut Street from South Railroad Avenue to South Main Street with about 2,400 feet of 10" water main. Included in this project should be replacement of the 4" water main on LawsStreet from Walnut Street to Cedar Street with about 400 feet of 8" water main.

Being proactive: Ensuring that town codes protect water quality, community character, and residents' well-being

Bridgeville and Greenwood do not have to reinvent the wheel or take extraordinary, expensive steps to comply with water pollution limits.

In fact, DNREC hired TetraTech to review town ordinances, identify best practices and barriers to protecting water quality, and issued a report for each town.

Tetra Tech reviewed municipal codes with the following checklist:

1. Minimize Effective or Connected Impervious Area
2. Preserve and Enhance the Hydrologic Function of Unpaved Areas
3. Harvest Rainwater
4. Allow and Encourage Multi-Use Stormwater Controls
5. Manage Stormwater to Meet Watershed Implementation Plan (WIP) and DNREC Regulations
6. Manage Construction Site Stormwater to Meet WIP and DNREC Regulations
7. Manage On-Site Wastewater Systems to Meet WIP and DNREC Regulations

TetraTech made detailed recommendations for each municipality. Considering and adopting some or all of these recommendations can save towns time, money and regulation in the future as WIP compliance dates approach.

Just as importantly, considering these changes can protect citizens, businesses and property from erosion and flooding and encourage more attractive, town-like development with amenities such as more trees and open space, parks, walking trails and water access, and fishable and swimmable ponds and streams.

To view the detailed findings and recommendations for Bridgeville and Greenwood go to:

http://www.cedarcreekplanners.com/code-recommendations/

Considerations for low-impact development

- mitigating runoff from paved and other man-made surfaces, citing new state stormwater regulations
- street and right-of-way widths
- minimum parking requirements
- open space and cluster development by right
- incentives for infill and redevelopment
- minimizing disturbance in environmentally sensitive areas
- stream buffers with appropriate vegetation
- flexibility in allowing low-impact development techniques such as bioswales, bioretention and constructed wetlands
- brush, grass and weed ordinances
- explicitly allowing and encouraging rainwater harvest
- ensuring through standards that increased flexibility does not lead to ugly or substandard development

Above, vegetated parking medians help infiltrate runoff from parking lots. Left, allowing flexibility in street widths, parking, lot sizes and setbacks minimizes impervious surfaces that contribute to pollution and flooding. Lower left, planting trees in streamside buffers is a low-cost way to protect waterways from pollution.

5. Transportation infrastructure

As a guiding principle of this plan, the leaders of Bridgeville and Greenwood agreed that excessive strip development along US 13 was inappropriate. Except for the intersections with DE 16 in Greenwood and DE 404 in Bridgeville, the corridor through this area remains relatively undeveloped compared to towns farther south along US 13.

DelDOT's corridor preservation program goals[1] are being realized throughout the Greenwood-Bridgeville corridor:

- Maintain a road's ability to handle safely and efficiently
- Minimize the impacts of increased economic growth
- Preserve the ability to make future improvements
- Prevent the need to build an entirely new road
- Sort local and through traffic

As a result, a system of service roads from north of Greenwood south to the Delaware State Police Troop 5 south of Bridgeville are planned or already built (see the two large maps on pages 32-34).

The intersection of US 13 with DE 404 underwent a major realignment that was completed in 2009. The skewed angle of the intersection was removed, improving visibility and reducing accidents at this high-volume intersection. Service roads were included in the project to plan ahead for anticipated development. Lanes were added to increase capacity along DE 404 and improve conditions for bicycles and pedestrians.

While the service roads were built to prepare for intensive commercial development that largely did not occur because of the recession, Bridgeville could easily accommodate additional commercial development in that area. In fact, a pharmacy, convenience store and supermarket are recently built or planned for the near future.

North of Rifle Range Road, the service roads are conceptual and would be built and paid for by future commercial development. In the Greenwood area, service roads have been built at the intersection with DE 16 to south of the Greenwood Cheer Center. Service roads north of Del. 16 are still conceptual.

The already built service roads south of Rifle Range Road appear more than sufficient to accommodate future commercial and mixed-use growth in and around its current location at the 404 intersection. Their existence provides a significant incentive to locate in that area. Directing growth to that area and away from other sections of US 13 meets one of this plan's guiding principles, to discourage strip development along US 13.

Other transportation issues

Heritage Shores. As evidenced by a significant increase in residential building permits for 2013, construction in Heritage Shores is regaining momentum, and in December 2013 the Bridgeville Town Commission approved Phase 3 of what is ultimately planned to be a 2,000-unit development. DelDOT and the developer noted that a construction entrance on the Wilson Farm Road side of Heritage Shores is being converted to a public entrance, which should improve circulation into and out of the development.

A connection from DE 404 to Heritage Shores will provide an alternate access along US 13. In turn, the connection will improve traffic circulation to the existing local roads and ramps.

A bicycle-pedestrian connection from Heritage Shores to the main part of Bridgeville near the library should be completed sooner than is currently planned. Such a connection would have multiple benefits for Heritage Shores residents and Bridgeville's downtown businesses. DelDOT recommends the connector be extended to the intersection of Market and Cannon streets to maximize access to this commercial area. While sidewalks exist in the area, DelDOT suggests creating a small park or at least adding street furniture to create a public gathering space away from traffic.

Future walkability and bike connections. For the sake of connectivity between new residential or mixed-use development and town services and businesses, straightforward and safe bicycle-pedestrian connections are important. They promote public health and safety, keep cars off the road, and provide an essential link that will give downtown Bridgeville a chance to remain viable.

DE 404 Truck Route. DelDOT noted that Alternate 404 (Newton Road) is regarded informally as a "truck route" but would have to be significantly upgraded if this road were to develop as an agribusiness/industrial corridor. While not currently within Bridgeville town limits, it is shown on the Master Plan Map as a future commercial employment (T-30) center.

New Woodbridge High School. DelDOT estimated in its April 12 Traffic Impact Study (TIS) that the new school would generate 420 total trips during morning peak hours and 290 trips during afternoon peak hours. All intersection analyzed in the study currently operate at Level of Service D or better, and are projected to do so with or without construction of the proposed land use, according to DelDOT.[2]

The school district complied with DelDOT requests to improve Woodbridge Road between the main student entrance and Adams road to meet DelDOT's local road standards. The district agreed to eliminate the existing access to the high school agricultural building located on Woodbridge Road and complied with DelDOT's recommendations regarding school bus access.

Several commercial developments along US 13 were stalled during the recession, but the service road infrastructure is in place to accommodate growth in the area.

Safety improvements. DelDOT's Safety Program Manager noted two projects that are part of its Hazard Elimination Program:

DE Route 404 at DE Route 18—studied as part of the 2011 Hazard Elimination Program (Site G). At this location, it was recommended to remove the bypass lane and install a westbound left-turn lane on SR 404; install a northbound right-turn lane and an acceleration/auxiliary lane on eastbound SR 404 between SR 18 and Sanfilippo Road; and install additional intersection lighting. Right of Way acquisition is planned for Fiscal Year 2016, and construction is programmed for FY 2017-18.

US Route 13 and Rifle Range Road—studied as part of the 2013 Hazard Elimination Program (Site A/L). At this location, DelDOT Traffic is considering restricting turning movements in order to reduce the number of angle crashes at the intersection. There are various options under consideration, and DelDOT plans to reach out to legislators and the general public in early 2014. This study is only in the planning stages; no design work has been completed to date.

The realignment of US 13 and DE 404 was completed in 2009. The project improved visibility, decreased accidents, and added lanes and service roads.

1 "The Corridor Capacity Preservation Program Manual, Delaware Department of Transportation, undated.

2 July 10, 2012 letter from Adam Weiser of DelDOT's Traffic Section to the transportation engineer for the high school.

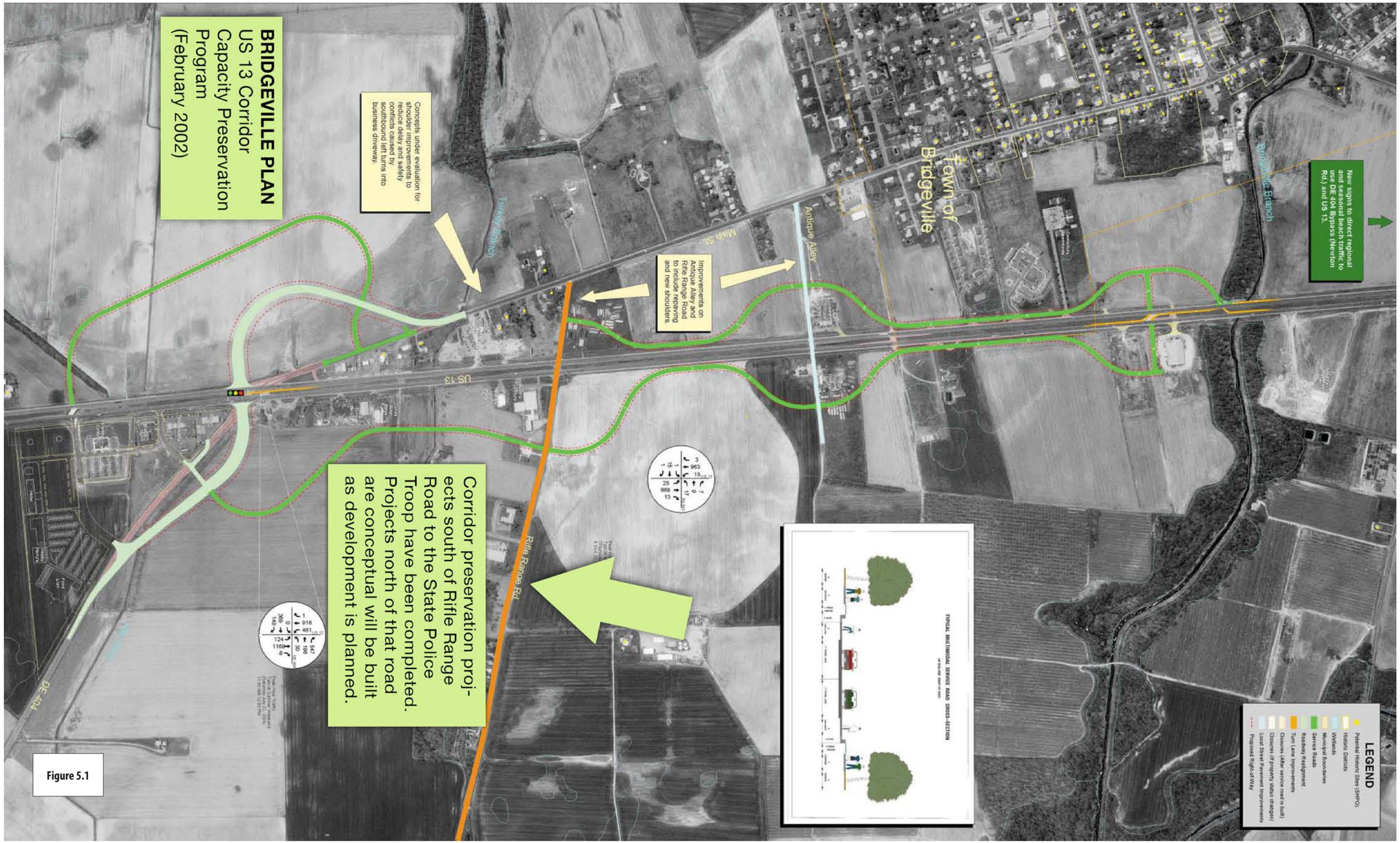

BRIDGEVILLE PLAN
US 13 Corridor
Capacity Preservation
Program
(February 2002)
Concepts under evaluation for shoulder improvements to reduce delay and safety conflicts caused by southbound left turns into business driveway.
Improvements on Antique Alley and Rifle Range Road to include repaving and new shoulders.
New signs to direct regional and seasonal beach traffic to use DE 404 Bypass (Newton Rd.) and US 13.
Town of Bridgeville
Bridgeville Branch
Antique Alley
Main St
Tussey Branch
US 13
Rifle Range Rd
DE 404
Corridor preservation projects south of Rifle Range Road to the State Police Troop have been completed. Projects north of that road are conceptual will be built as development is planned.
TYPICAL MULTIMODAL SERVICE ROAD CROSS-SECTION
LEGEND
Potential Historic Sites (SHPO)
Historic Districts
Wetlands
Municipal Boundaries
Service Roads
Roadway Realignment
Turn Lane Improvements
Closures (After service road is built)
Closures (If property status changes)
Local Street Pavement Improvements
Proposed Right-of-Way

Figure 5.1

Figure 5.2

6. Schools prepared for growth

Serving both Bridgeville and Greenwood, the Woodbridge School District is prepared for planned population growth in both towns with the construction of a new high school and the reconfiguration of existing schools.

The 160,000 square-foot Woodbridge High School is scheduled to open in the fall of 2014; its total campus area is 128.34 acres. The land for the school was purchased in 1969 and is located on Woodbridge Road (Sussex Road 585). The high school is located in Investment Level 2 (Figure 6.2 on page 36) according to Delaware's 2010 State Strategies for Policies and Spending.

However, the Strategies describe Level 2 as:

". . . composed of less developed areas within municipalities, rapidly growing areas in the counties that have or will have public water and wastewater services and utilities, areas that are generally adjacent to or near Investment Level 1 Areas, smaller towns and rural villages that should grow consistently with their historic character, and suburban areas with public water, wastewater, and utility services. These areas have been shown to be the most active portion of Delaware's developed landscape. They serve as transition areas between Level 1 and the state's more open, less populated areas. They generally contain a limited variety of housing types, predominantly detached single-family dwellings."[1]

The Master Plan Steering Committee has determined it does not want to see low-density residential growth surrounding the school. Also, there are several large agricultural parcels nearby that are in the state's Purchase of Development Rights program (See Figure 4.8 on page 29). A Level 2 surrounded by a Level 3 long-term growth area may not be an appropriate designation for the school.

The school is being built to accommodate 700 students; there are currently 596 students attending the existing Woodbridge High School. In addition, the sizing of core facilities (common areas such as the cafeteria, auditorium and gymnasium) will enable the high school to expand more quickly and cost effectively to a capacity of 1,000 students.

Located between Bridgeville and Greenwood, the high school will tap into the sewer force main running between the two towns. In June 2012, the school district signed an agreement with the Town of Greenwood to purchase 45 Equivalent Dwelling Units (EDUs) at a rate of $4,250 each. The purchase of $191,250 will enable the school to meet the current requirements for occupancy and allow for the use of up to 9,000 gallons per day.

When the high school expands, it will require an additional 15 EDUs. Those EDUs will be subject to a different negotiated rate.

The Department of Transportation (DelDOT) estimated in its April 12 Traffic Impact Study (TIS) that the new school would generate 420 total trips during morning peak hours and 290 trips during afternoon peak hours. All intersection analyzed in the study currently operate at Level of Service D or better, and are projected to do so with or without construction of the proposed land use, according to DelDOT.[2]

The school district complied with DelDOT requests to improve Woodbridge Road between the main student entrance and

1 "Strategies for State Policies and Spending," 2010, http://stateplanning.delaware.gov/strategies/invest2.shtml

2 July 10, 2012 letter from Adam Weiser of DelDOT's Traffic Section to the transportation engineer for the high school.

The main sunlit atrium at the new Woodbridge High School, which is scheduled to open in Fall 2014. This photo was taken in January 2014.

Adams road to meet DelDOT's local road standards. The district agreed to eliminate the existing access to the high school agricultural building located on Woodbridge Road and complied with DelDOT's recommendations regarding school bus access.

A 450 kw generator will provide electricity to the high school, which is designated as a community shelter. The school also has its own water delivery system, a 70 gallon-per-minute well dug to a depth of 350 feet. A separate, nonpotable 300 gallon-per-minute well irrigates the school's athletic fields.

Reconfiguration of Woodbridge schools

While Greenwood Elementary School is currently operating over capacity with 980 students vs. its built capacity of 662, the planned reconfiguration of the district's schools when the high school opens will alleviate the over-crowding and provide sufficient capacity into the next decade. The new configuration is:

- The existing Greenwood Elementary School will become a pre-Kindergarten to Grade 2 Early Childhood Education Center;
- The existing Phillis Wheatley Middle School will become the new Phillis Wheatley elementary school, grades 3 through 5;
- The current Woodbridge High School will become Woodbridge Middle School, accommodating students in grades 6 through 8; and
- The new Woodbridge High School will serve students in grades 9-12.

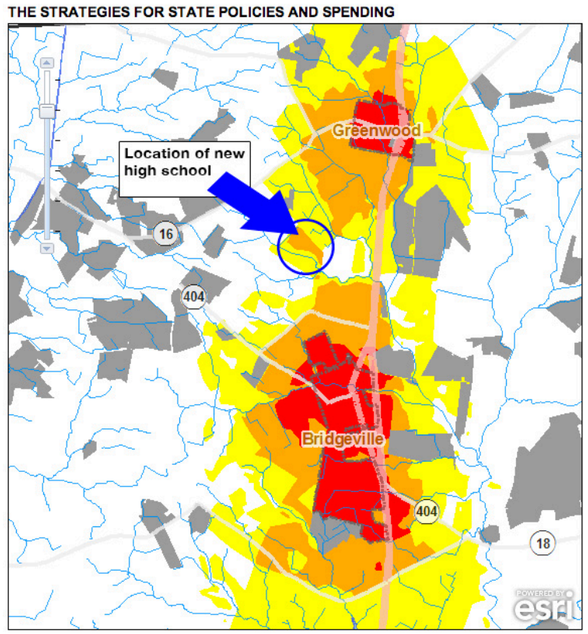


Figure 6.1 *The new high school, even though it is rural with no development surrounding it, is classified as Level 2 by the Strategies for State Policies and Spending.*

Woodbridge School District Enrollment Projections
Projected numbers based on five-year promotion rate by grade

	Pre-K to 2	3-5	6-8	9-12	Total
2008-09	525	482	495	551	2053
2009-10	532	499	497	539	2067
2010-11	559	554	495	571	2179
2011-12	573	554	541	592	2260
2012-13	590	528	559	581	2258
2013-14	594	539	587	596	2317

Source: *Woodbridge School District*

Figure 6.2

7. Downtown Destination

Both Bridgeville and Greenwood have unique identities as rural farm towns in western Sussex County. Bridgeville, especially, has a history of prosperous agribusinesses – RAPA Scrapple, T.S. Smith, PictSweet, PetPoultry, Cannon Cold Storage. Perdue, O.A. Newton and Sons, T.G. Adams and Sons, and entrepreneurial farmers.

The area already draws thousands of visitors every year for two major outdoor festivals related to its agricultural heritage – Apple Scrapple and the World Championship Punkin Chunkin. A strategy that celebrates that heritage and culture year round could be a successful one for Bridgeville. The national emphasis – especially in urban areas – on locally grown, healthy and "sustainable" foods could be a key to revitalizing the local economy.

Both towns have seen infrastructure built along US 13 that can accommodate additional commercial growth. The existing infrastructure and available land—especially around the intersection of US 13 and DE 404—can be viewed as an attractive economic advantage and selling point.

However, attracting businesses to US 13 could be a hollow victory for Bridgeville if the downtown Market Street area is neglected and continues to decline. Documented efforts to reinvigorate Market Street have not been successful, although bright spots such as Dollar General's plans to build a new store and the recent opening of a women's clothing boutique show potential.

Why discuss downtown development?

It may seem somewhat out of scope for a Master Plan driven by water quality issues to take up the topic of economic development. The relationship is straightforward:

- Encouraging people to live, shop and perhaps work in a central downtown area prevents sprawling, low-density residential development that has a negative impact on water quality;

- Discouraging low-density development also recognizes the value of local agribusinesses and farmers and preserves access to nearby farm fields and farm products; and
- Residential development and agricultural practices often conflict, generating complaints about traffic, odor and noise and threatening the viability of those agricultural businesses.

A strategy that attempts to create infill housing and reinvigorate a central business area is good for water quality, the area's many agribusinesses, and quality of life overall.

Greenwood, as the smaller of the two towns, has no major residential development planned for the near future and is not seeking an economic redevelopment strategy. One of the town's most famous draws is the Greenwood Volunteer Fire Company's chicken barbecue on summer weekends. A newly constructed 10,000-square-foot public library opened in town in June 2014, and a single developer is purchasing and rehabilitating older homes.

Challenges for Bridgeville

It can be difficult for local business owners to envision other scenarios for their downtown beyond traditional retail. A March 2010 assessment[1] with the Delaware Economic Development Office and the national Main Street program recognized downtown assets such as plentiful parking, an attractive gateway into

1 Memorandum to the Town of Bridgeville from the National Main Street Trust Center and the Delaware Economic Development Office, March 17, 2010.

Local agricultural entrepreneurs already understand the value of marketing fresh, local foods.

the Market Street area, vacancies that offer new business opportunities and the location of churches and a bank downtown.

But that report did cite challenges such as getting businesses and property owners on board, absentee property owners, the relocation of the library away from Market Street, the spread-out nature of Market Street businesses, and a streetscape that needs sprucing up.

"Even after the bypass, 70% of the traffic headed to the beach comes through Bridgeville and 50% of those cars pass through coming back from beach," the study noted. "However, there are few compelling reasons for them to stop in downtown Bridgeville. Some businesses, and perhaps many, are not open when the beach traffic comes through on the weekends from April through October."

The study also listed opportunities to do small-scale beautification projects, put artwork in vacant storefront windows, provide additional strategic planning for Bridgeville, and conducting a market analysis to flesh out customer preferences.

"Due to the growth and development on Rt. 13, there is a growing customer base which may spur interest in available properties in downtown. It also offers an opportunity for businesses to be open during weekend and evening hours as visitors pass through," according to the study. "Those interviewed during the assessment visit noted they would like to see more businesses like a bakery, coffee shop, shoes, gifts, etc., and that they believe they could be profitable."

DEDO has once again reached out to Bridgeville to apply for a share of a $234,634 grant from the U.S. Department of Agriculture's Rural Community Development Initiative. The Town should not leave that opportunity on the table.

"To be eligible for services, it is necessary that your community show need for services, show a desire to receive services, illustrate capacity to receive services and also implement initiatives at a level deemed appropriate and reasonable by representatives of the community and DEDO/Downtown Delaware," the January 2014 offer letter states.

Branding strategy

Bridgeville participated in a community branding workshop with Arnett Muldrow and Associates, a planning firm that has worked with several towns in Delaware. One of the results, "Bridgeville: Feels Like Home" seems to complement the town's existing slogan, "If You Lived Here You Would Be Home Now" and feeds into Master Plan efforts to create a more interconnected town with infill residential development and a revitalized downtown.

The town should revisit this proposed brand with a fresh set of eyes. The town really needs to distinguish and position itself in some way.

A Business Improvement District would facilitate façade improvements, downtown events, streetscaping, sidewalk improvements and other projects that would improve downtown foot traffic and business success. Another possibility is a rent-free strategy to attract new entrepreneurs to the downtown, such as DEDO's Project Popup.

Celebrating agricultural and natural heritage

One possibility is featuring the town's agricultural identity and recognizing the national trend toward local, healthy and sustainable foods. While it's likelier for modern trends and demographics to support retail development on US 13, especially where there is existing service road infrastructure, consider reinventing downtown Bridgeville as a destination.

With Apple-Scrapple, Bridgeville and its thousands of visitors already recognize that heritage. There are many opportunities to convert it to a successful, year-round strategy.

Consider a "farm to table" and/or "farm to store" destination strategy that features the local agricultural and food goods: scrapple, apples and apple products, fruits and vegetables, ice cream, locally grown meats and breads, etc. Scrapple, for one, is a signature product unique to this region.

Locally grown (sustainable) foods is a national trend. In and around the Bridgeville-Greenwood area, there are local producers of bread products, chicken and beef, dairy products, scrapple, fruits, wool producers, etc. A successful strategy would need to intercept and attract urban tourists passing through. Joanne Steele, President of the Rural Tourism Marketing Group, writes:[2]

"For the first time ever, rural communities can become successful for being exactly who they are . . . In the past five years tourism has seen some big changes. Large numbers of travelers have lost interest in cookie cutter restaurants, lodging and attractions.

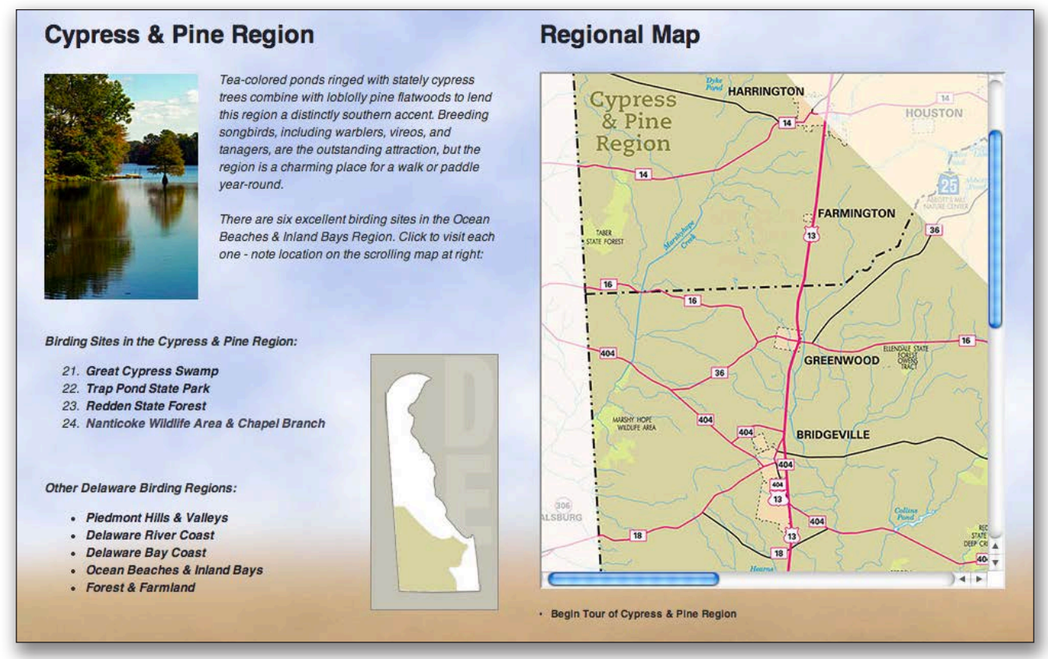
"Instead, they want local food, local attractions and connection to the lifestyles of local people. This has lead to huge new trends —the Slow Food Movement, Authentic Tourism, Geotourism, Agritourism, Heritage Tourism and more."

Other potential features of a successful agritourism and geotourism strategy:

- The "farm to table" strategy could be complemented by a Saturday or Sunday farmers market. Apparently, T.S. Smith attempted a farmer's market on the highway with limited support and success, but farmer's markets in Milford, Milton and other Sussex towns have become vibrant community gathering spots that boost downtown businesses.
- Consider a community garden on vacant property downtown. Nearby towns such as St. Michael's, Md., Berlin, Md., and Delaware City have started these gardens. A likely partner could be one of the downtown churches. Community garden would bring people downtown and promote healthy eating and nutrition and fit with the downtown theme.

2 "Rural Tourism: It's Never Been a Better Time to be a Small Town," by Joanne Steel, President of the Rural Tourism Marketing Group, February 2010.

The town's famous motto and the proposed branding strategy developed in 2011 can co-exist. The Town should consider branding itself.



Source: *DelawareBirdingTrail.org. The region that includes Bridgeville and Greenwood is well-known for its birding, and towns could serve as a gateway to eco-tourism activities including birding, biking, kayaking and hiking - as well as hunting and fishing.*

- Neighboring farms should be encouraged to pursue agritourism strategies such as pick-your-own, farm tours, petting pens, bed and breakfasts, and seasonal attractions.
- Collectibles could be another fill-in substrategy. Antique Alley on the highway already attracts people from well beyond Bridgeville, and there are a couple of collectibles stores downtown already—with inconsistent hours of operation.
- Another potential substrategy is as a gateway to the Nanticoke watershed for birders, kayakers, cyclists, hunters and fishing aficionados. This could mean outfitters, bed and breakfast accommodations, tour guides, and similar low-impact tourism-related businesses.
- Businesses that follow these strategies will need to keep consistent hours, including on Sundays.

This Master Plan recognizes that previous economic development efforts have not always been receptive to outside advice and eventually have foundered. But does Bridgeville really want to be just a pass-through town and highway fast-food stop when it has so much more to offer—both to potential visitors and to potential entrepreneurs?

The branding examples prepared by Arnett, Muldrow and Associates captured the concept of culinary or agritourism. Because of its agricultural roots and its existing success in attracting thousands to the area for the Apple-Scrapple Festival a "farm-to-store" and "farm-to-table" destination economic development strategy could be successful .

8. Plan implementation

These recommendations are mostly gathered from throughout the Master Plan document. This Master Plan and its implementation should demonstrate the towns' commitment to thoughtful planning and protection of water resources. It should put the towns in a favorable position with respect to financial and technical assistance, regulatory oversight and long-term growth and economic development. Both towns should carefully consider a plan implementation strategy and how to leverage it.

Intergovernmental Coordination. An example where such coordination is needed between the towns, county and state would be a strategy for the area around the high school to discourage low-density development on individual septic systems. Target more parcels for Purchase of Development Rights or Transfer of Development Rights. An MOU with the towns, Sussex County, Department of Agriculture and DNREC could help formalize such a strategy.

Wastewater cost analysis. Together, the Town and State should consider the benefits of financing an Enhanced Nutrient Removal facility that treats effluent to 4 milligrams per liter of nitrogen. The Town would not have to purchase hundreds of acres of land for spray irrigation, and the State could potentially avoid thousands of individual septic systems that produce 50-60 mg/l of nitrogen. It is in the best interests of the State and its Watershed Implementation Plan to help municipalities finance these ENR plants. These are the kinds of investments that should be made with any clean water funding mechanism.

Memorandum of agreement. The Towns and DNREC need an agreement clarifying the regulatory basis and parameters of any offset requirement. Such a program ensures that new development does not create net new loads of nitrogen, phosphorous and sediment; if it does, those new loads must be offset, according to DNREC. As of March 2014 there is no established protocol for determining pre- and post-development loading rates; there is no credit bank or "official" method of accounting for loads and offsets; and there is no menu of best management practices or restoration projects with associated load reductions.

Potential offset bank. The Wheatley Farm parcels south of Heritage Shores were once slated for 1,800 residential units. In January 2014, the Agricultural Lands Preservation Foundation selected the parcels totaling almost 500 acres for a permanent agricultural easement. The farm includes a large forest block of about 300 acres. If regulations ever require the offset of construction and new development, the farm and forest could potentially serve as a credit bank. Habitat, forest and stream restoration, best management practices for agriculture, etc.

Poultry BMPs. DNREC and the landowner should pursue Best Management Practices at the farm adjacent to Heritage Shores (Wilson Farm) to decrease odors from poultry houses. Bank those credits either for the town or for the farmer.

Source Water Protection Ordinance. As the town of Bridgeville has exceeded 2,000 residents, state law requires that it adopt an ordinance protecting wellheads and excellent recharge areas. Future comprehensive plan updates will not be certified by the state until a protective ordinance is adopted.

Residential Planned Community ordinance. More easily accommodate new development trends and demographics with flexible lot sizes and more town-like development. In return for more flexibility, compact design and expedited approvals, these developments would protect water resources with open space, clustering, low-impact stormwater design, trails, buffers from

Bridgeville and the state need to engage on the financing of an upgraded or new municipal wastewater treatment plant that is both affordable for ratepayers and meets the goals of the Chesapeake Watershed Implementation Plan.

wetlands and waterways, native landscaping, street trees and other amenities. Such an ordinance should not be ad hoc for a particular development, but should apply to all new residential and mixed-use development.

TetraTech recommendations. In 2011, TetraTech reviewed both Bridgeville and Greenwood ordinances to determine barriers to protecting water quality. They include allowing for cluster and open-space design; permitting low-impact development Best Management Practices; street widths; parking requirements; stream buffers; and minimizing disturbance in environmentally sensitive areas; among other recommendations. *See page 31 for more details.*

Commercial buffers. Many of the parcels located along US 13 back up to forested waterways. Both towns should require appropriately sized vegetated buffers from wet areas to avoid net new loading of nutrient pollutants. No parking of vehicles, tool sheds, garages, etc., should be allowed within the buffer.

Infill market-rate development. Identify parcels in town that would support market-rate multi-family housing – apartments, condos or townhomes. Ensure the parcels are appropriately zoned and provide incentives to encourage their development.

Permit accessory dwelling units. These are separate living quarters that provide new, affordable housing downtown as well as rental income. They must have design standards that honor and reflect the architecture of historic Bridgeville.

Also, the towns should be credited for following this Master Plan, which will yield 86 percent fewer individual septic systems than existing county and town plans. It also will decrease the percentage of impervious surfaces in the Master Plan study area.

Connecting residents to services. Residential development should have easy bicycle and pedestrian access to the town library, post office, parks, bank and other downtown amenities. Such connections can help strengthen and enliven the Market Street area of Bridgeville, for example, and should be required early in a new residential project rather than later.

Economic development. Infill housing will bring more people downtown; so will increased connectivity to existing and future development. Don't forget the Market Street area when promoting Bridgeville. It is a hollow victory if the Town is successful in attracting retail to US 13 and the downtown continues to deteriorate. Even if existing merchants are reluctant to take steps, there are destination options for Bridgeville.

- While it is likelier for modern trends and demographics to support retail development on US 13, especially where there is existing service road infrastructure, consider reinventing downtown Bridgeville as a destination.

USDA Rural Development

Committed to the future of rural communities.

DEDO has received $234,643 in federal Rural Communities Development Initiative funds to help towns such as Bridgeville.

- Recently, DEDO was awarded a USDA Rural Community Development Initiative (RCDI) grant of $234,643 that allowed DEDO to expand technical assistance to seven rural towns in Kent and Sussex Counties over a three year timeframe. These "USDA Recipient Towns" include Bridgeville, Delmar, Harrington, Laurel, Milford, Millsboro, and Milton. Accept assistance from DEDO as offered – don't leave money on the table!
- Consider dusting off the "Feels Like Home" branding strategy prepared in collaboration with DEDO.
- Consider a Business Improvement District to facilitate façade improvements, downtown events, sidewalk improvements, etc. Also consider a free-rent strategy to attract new entrepreneurs to the downtown, such as DEDO's Project Popup.
- Consider a "farm to table" and/or "farm to store" destination strategy that features the local agricultural and food goods: scrapple, fruits and vegetables, ice cream, locally grown meats and breads, etc. Locally grown (sustainable) foods is a national trend – there are local producers of bread products, chicken and beef, dairy products, scrapple, fruits, wool producers, etc. Cite additional examples and resources. A successful strategy would need to intercept and attract tourists passing through.
- This strategy could be complemented by a Saturday or Sunday farmers market that could also serve as a community gathering spot. Consider a community garden on vacant property downtown. Nearby towns such as St. Michael's, Md., Berlin, Md., and Delaware City have started these gardens.
- Neighboring farms should be encouraged to pursue agritourism strategies such as pick-your-own, farm tours, petting pens, and bed and breakfasts.
- Collectibles could be another fill-in sub-strategy. Antique Alley on highway already attracts people from well beyond Bridgeville.
- Another potential sub-strategy is as a gateway to the Nanticoke for birders, kayakers, cyclists, etc. This could mean an outfitter, bed and breakfast accommodations, tour guides, etc.
- Businesses that follow these strategies will need to keep consistent hours, including on Sundays
- From March 2010 DEDO report:

  "In order for economic development to get a kick start it is likely the town (EDC) and local financial institutions need to incentivize business development in the downtown district. Explore the possibilities. Other communities that have struggled with vacancy issues have conducted Business Plan Contests, awarding grants and/or low interest loans to the best business plan submitted. Of course the winner should be opening a business that has been identified as a desired business for the district. Property owners should also be asked to consider offering free rent temporarily or decrease rents to assist new business start-ups.

  "Investigate Federal Transportation Enhancement grants through DelDOT to fund streetscape improvements, such as lighting, sidewalks, and other street amenities."
- Make sure that local and thriving agribusinesses (and the area farms that serve them) are valued and protecting by pursuing a development strategy that discourages low-density development that gobbles up farmland and creates unnecessary conflicts with their operations. Review and strengthen (if necessary) Bridgeville's Agricultural Overlay Zone.

Annexation standards. Be proactive rather than reactive regarding annexations. Residential annexations should be in accord with the comp plan/master plan. Annexations should be well connected to the town and not allowed to be enclaves. Town-like design standards, grid streets. For residential-only development, the Town should require a fiscal-impact analysis *(see below)* to determine the demand on services vs. projected revenues; the analysis should be done by a third party.

Likewise, the Town should be fully aware of the environmental impact of new urban nutrient loads and ensure that the responsibility and cost of complying with any future offset requirement is on the developer, not on the town. This is to protect the town and its current residents. A Special Development District similar to that in place at Heritage Shores could incorporate

US 13 development. Direct growth along US 13 to those areas of Bridgeville and Greenwood where service roads already are complete. Their completion represents a significant incentive to locate there. Stick to plan principles and discourage strip zoning along the highway.

No surprises: Why local governments should require a fiscal impact study

Requiring a fiscal impact analysis of a development proposal is not anti-growth. Government's first responsibility is to its ratepayers and taxpayers.

Whenever land is developed in a given municipality – no matter if it is for residential, industrial, or commercial use – a host of new costs are incurred by the municipal government in order to provide additional services and infrastructures to that development.

Such services include the expansion of fire protection, policing, and emergency services, just to name a few.

A variety of infrastructure costs are also incurred, such as the provision of water, sewer and roads. Therefore, it is important that municipalities determine whether or not the flow of new property tax revenues from a new development will balance out the incurred costs.

In Delaware, the absence of a state or local sales tax negatively affects the payback of commercial retail projects, especially if anticipated wages are low.

Also local development generates costs at the state level - for roads and schools, for example. So the state also should have a stake in projecting the costs of development projects.

Towns could contract in advance with a firm that performs fiscal impact analyses for governments and agree on a methodology before a specific development proposal is on the table. The cost of the study would be borne by the developer.

Appendix

Chronology of Progress

Bridgeville-Greenwood Master Plan

2012

1 FEB	Met with B. Hall, L. Walling, K. Coyle, J. Volk and Ca. Bason re: the Bridgeville-Greenwood master planning process
7 FEB	Hosted a tour of the Bridgeville and Greenwood communities for staff from UD and DNREC
8 FEB	Co-hosted the inaugural public meeting for the Bridgeville-Greenwood Master Plan project
23 FEB	Met with P. Correll/J. Savage (Town of Bridgeville) and B. Hall (OSPC) to discuss modifications to the services agreement for the Bridgeville-Greenwood Master Plan project
12 MAR	Met with B. Hall to discuss plans for the Bridgeville-Greenwood Master Plan Steering Committee meeting
21 MAR	Facilitated a meeting of the Bridgeville-Greenwood Master Plan Steering Committee
3 APR	Met with B. Hall to continue planning activities for the Bridgeville-Greenwood Master Plan project
9 APR	Met with staff from OSPC and DNREC in Dover to discuss Master Plan process for Chesapeake Bay/Phase II WIP
3 May	Hosted the Chesapeake WIP planning team to construct UD Land Use Model growth scenarios for the Bridgeville-Greenwood Master Plan
8 JUN	Met with Ca. Bason to continue growth scenario planning for the Bridgeville-Greenwood Master Plan project
12 JUN	Co-hosted a public workshop for the Bridgeville-Greenwood Master Plan at the Bridgeville Public Library
9 JUL	Met with Ca. Bason and N. Minni (IPA) to update Bridgeville-Greenwood Master Plan growth scenarios
12 JUL	Convened/facilitated a meeting of the Bridgeville-Greenwood Master Plan Steering Committee
7 AUG	Attended the regular meeting of the Town of Greenwood Commissioners to present the draft growth scenario for the Bridgeville-Greenwood Master Plan
13 AUG	Attended a meeting of the Town Commissioners of Bridgeville to provide an update on the Bridgeville-Greenwood Master Plan process
22 AUG	Attended the Bridgeville-Greenwood PLUS hearing in Dover
5 SEP	Met with J. Savage (Town Manager, Bridgeville) and B. Hall (OSPC) to discuss no-cost extension and next steps for Bridgeville-Greenwood Master Plan
25 SEP	Co-hosted a public forum at the Bridgeville Public Library re: the Bridgeville-Greenwood Master Plan
27 SEP	Co-hosted a public forum at the Greenwood Fire Hall re: the Bridgeville-Greenwood Master Plan
2 OCT	Met with J. Savage (Town Manager, Town of Bridgeville) to review comments from public forum re: Bridgeville-Greenwood Master Plan
18-19 OCT	Attended the MD/DE American Planning Association Conference in Columbia, MD; provided two, 1.5 hr training weTable/land use model training seminars featuring the Bridgeville-Greenwood Master Plan project
27 NOV	Facilitated Bridgeville-Greenwood Master Plan meeting for Bridgeville Town Commission

2013

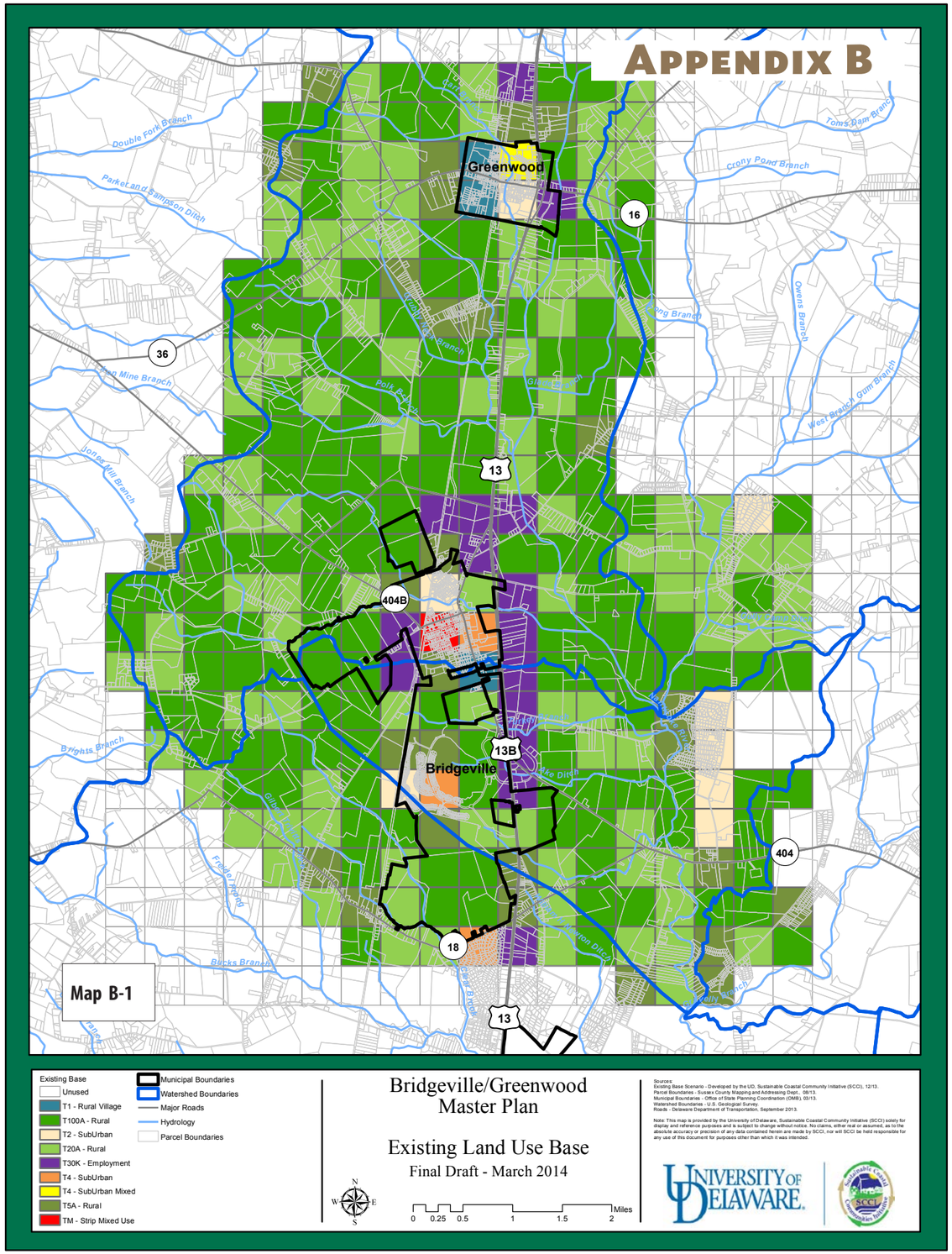
5 MAR	Assisted N. Minni (IPA) with set-up and preparations for weTable demonstration at DNREC Chesapeake Communities Work shop at Heritage Shores in Bridgeville
15 MAR	Hosted a meeting between SCCI, DNREC and OSPC to discuss continuation of Chesapeake Watershed Master Plans projects and completion of Bridgeville-Greenwood Master Plan
21 MAR	Met with J. Walls/M. Fox/B. Bloch (DNREC) to establish implementation strategies and a timeline for the Bridgeville-Greenwood Master Plan
11 JUN	Met with E. Wahl (Element Design Group), C. Holland/D. Morris (OSPC) for project updates, including production of Bridgeville-Greenwood T-zone map
3 JUL	Met with B. McGowan and L. Walling to discuss completion of a Master Plan for the Town of Bridgeville
22 JUL	Met with J. Savage and L. Walling to discuss development of the Bridgeville-Greenwood Master Plan report
2 AUG	Met with J. Walls (DNREC) to amend Chesapeake WIP project award to include funding for completion of Bridgeville-Greenwood Master Plan
1 OCT	Met with L. Walling to review timeline/deliverables for Bridgeville-Greenwood Master Plan
28 OCT	L..A. Walling met with Connie Holland and Dorothy Morris of Office of State Planning Coordination to discuss plan
29 OCT	L.A. Walling met with Bryan Hall, formerly of State Planning, to discuss plan progree

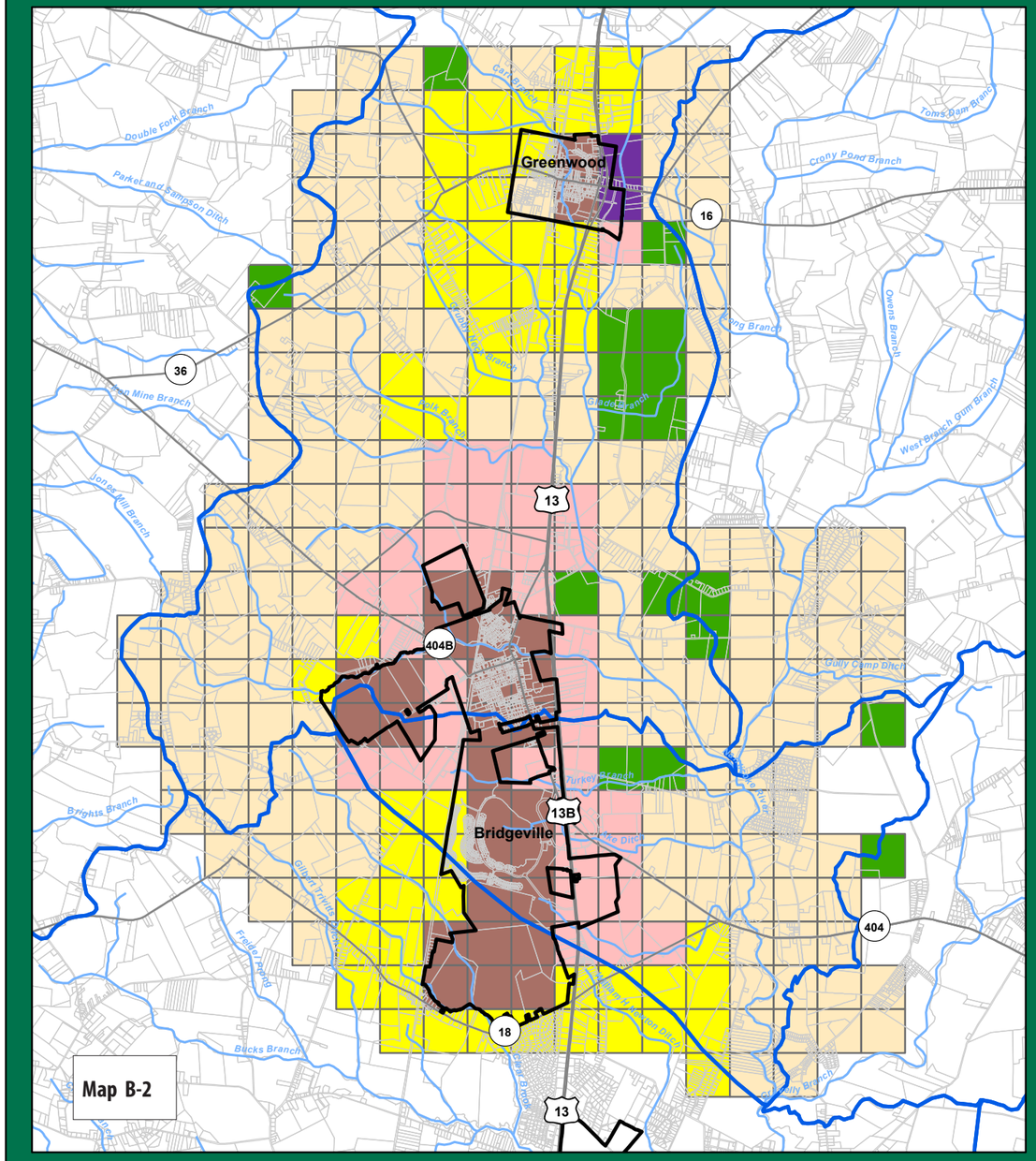
6 NOV	Met with P. Correll (Commission President, Town of Bridgeville), J. Savage (Town Manager, Bridgeville), and L. Walling to review the draft outline and timeline for the Master Plan for the Town of Bridgeville
25 NOV	L.A. Walling met with Jason Loar of Davis Bowen and Friedel in Salisbury, Md., to discuss wastewater study
26 NOV	L.A. Walling met with Joe Conaway for tour of Bridgeville area
3 DEC	L.A. Walling met with Doug Rambo and Kevin Coyle of DNREC to discuss sourcewater protection areas
	L.A. Walling met with Jennifer Walls of DNREC to discuss nutrient loads
6 DEC	Met with L.A. Walling (Cedar Creek Consultants) and N. Minni (IPA) to review Bridgeville-Greenwood growth scenarios and CommunityViz analyses
18 DEC	L.A. Walling met with Derek Sapp, Tom Felice and Steve Sisson of DelDOT to discuss corridor preservation and DelDOT concerns in Bridgeville-Greenwood area
19 DEC	L.A. Walling met with Karen Horton and Marlena Gibson of Delaware State Housing Authority to discuss housing issues in Bridgeville-Greenwood area
23 DEC	L.A. Walling met with Diane Laird of DEDO in Wilmington to discuss Main Street and economic development funding

2014

3 JAN	L.A. Walling met with Ed Lewandowski and Nicole Minni (UD) to discuss progress and buildout analysis.
8 JAN	L.A. Walling met with Nicole Minni (UD) to review maps.
9 JAN	L.A. Walling at Town Hall to review building permits.
	L.A. Walling met with Greer Stangl of TS Smith in Bridgeville
	L.A. Walling met with John Marinucci of Woodbridge School District and toured new high school
13 JAN	L.A. Walling attended Bridgeville Town Commission meeting
16 JAN	L.A. Walling met with Carol Bason and Nicole Minni (UD) to review weTable methodology and maps.
20 JAN	L.A. Walling met with John McDonnell, Town Manager, Greenwood
23 JAN	L.A. Walling met at DNREC with Jesse Savage and Jason Loar of DBF to discuss wastewater report and financing of upgrade
24 JAN	L.A. Walling met with Austin Short and Scott Blaier, Delaware Department of Agriculture
29 JAN	L.A. Walling met with Jesse Savage to discuss annexation areas
30 JAN	L.A. Walling met with Robert Rauch, developer of Heritage Shores, in Easton, Md.
31 JAN	L.A. Walling met with Ed Lewandowski and Nicole Minni to review progress
6 FEB	L.A. Walling meet with Commissioner Lawrence Tassone re economic development
12 MAR	L.A. Walling, Ed Lewandowski met with Sussex P&Z Chair Bob Wheatley
18 MAR	Bridgeville Planning and Zoning Commission presentation
19 MAR	L.A. Walling and Ed Lewandowski met with DNREC's Planners Technical Advisory Committee (PTAC)
25 MAR	Bridgeville Town Commission presentation
26 MAR	L.A. Walling, Ed Lewandowski, P. Correll and others attended PLUS meeting on Master Plan
22 MAY	L.A. Walling, Ed Lewandowski met with John McDonnell, Greenwood Town Manager and Jennifer Walls, Marcia Fox and others from DNREC
19 JUNE	L.A. Walling met with Connie Holland and Dorothy Morris, Office of State Planning Coordination

Appendix B





Comprehensive Plan

- T100A - Rural
- T2 - SubUrban
- T30K - Employment
- T4 - SubUrban Mixed
- T6 - Urban Mixed
- T8 - Town Center

- Municipal Boundaries
- Watershed Boundaries
- Major Roads
- Hydrology
- Parcel Boundaries

Bridgeville/Greenwood
Master Plan

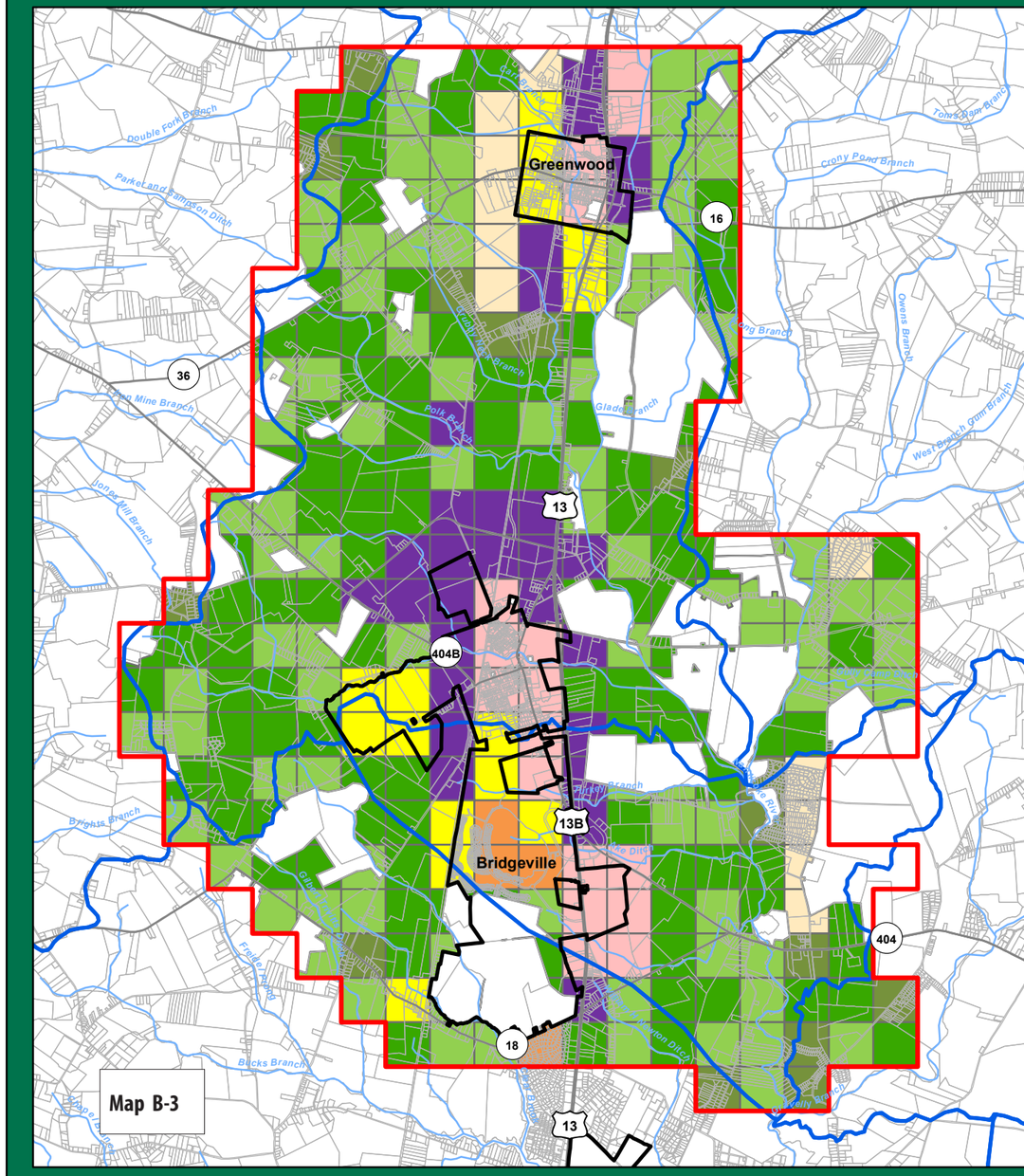
Comprehensive Plan

Final Draft - March 2014

0 0.25 0.5 1 1.5 2 Miles

Sources:
Comprehensive Plan Scenario - Developed by the UD, Sustainable Coastal Community Initiative (SCCI), 12/13.
Parcel Boundaries - Sussex County Mapping and Addressing Dept., 08/13.
Municipal Boundaries - Office of State Planning Coordination (OMB), 03/13.
Watershed Boundaries - U.S. Geological Survey.
Roads - Delaware Department of Transportation, September 2013.

Note: This map is provided by the University of Delaware, Sustainable Coastal Community Initiative (SCCI) solely for display and reference purposes and is subject to change without notice. No claims, either real or assumed, as to the absolute accuracy or precision of any data contained herein are made by SCCI, nor will SCCI be held responsible for any use of this document for purposes other than which it was intended.



- T100A - Rural
- T2 - SubUrban
- T20A - Rural
- T30K - Employment
- T4 - SubUrban
- T4 - SubUrban Mixed
- T5A - Rural
- T6 - Urban Mixed

- Study Area
- Municipal Boundaries
- Watershed Boundaries
- Major Roads
- Hydrology
- Parcel Boundaries

Bridgeville/Greenwood
Master Plan
Buildable Area

Final Draft - March 2014

0 0.275 0.55 1.1 1.65 2.2 Miles

Sources:
Buildable Area - Developed from the Town of Bridgeville and the Town of Greenwood's final composite, created by the University of Delaware, Sustainable Coastal Community Initiative (SCCI), 02/14.
Parcel Boundaries - Sussex County Mapping and Addressing Dept., 08/13.
Municipal Boundaries - Office of State Planning Coordination (OMB), 03/13.
Watershed Boundaries - U.S. Geological Survey.
Roads - Delaware Department of Transportation, September 2011.
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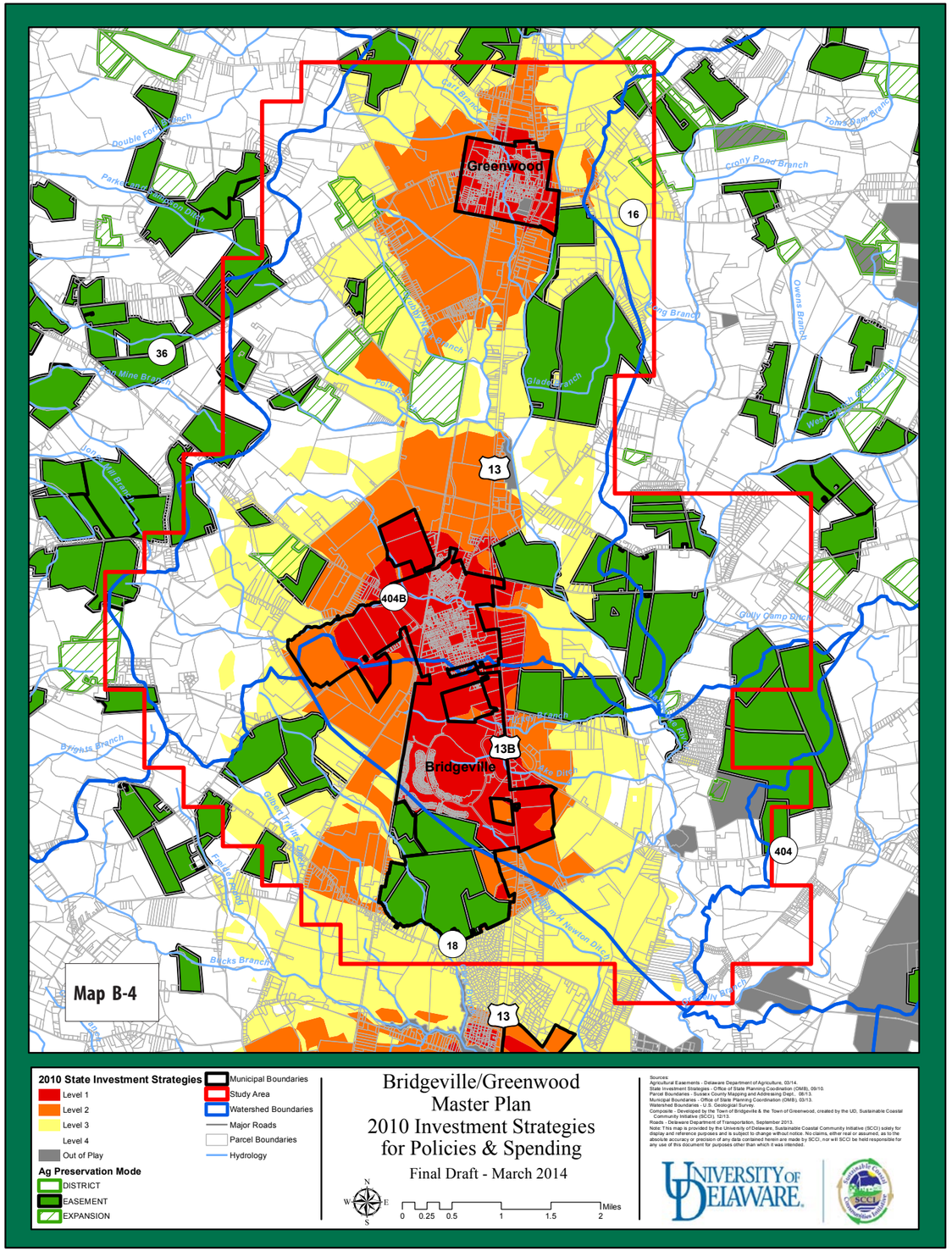
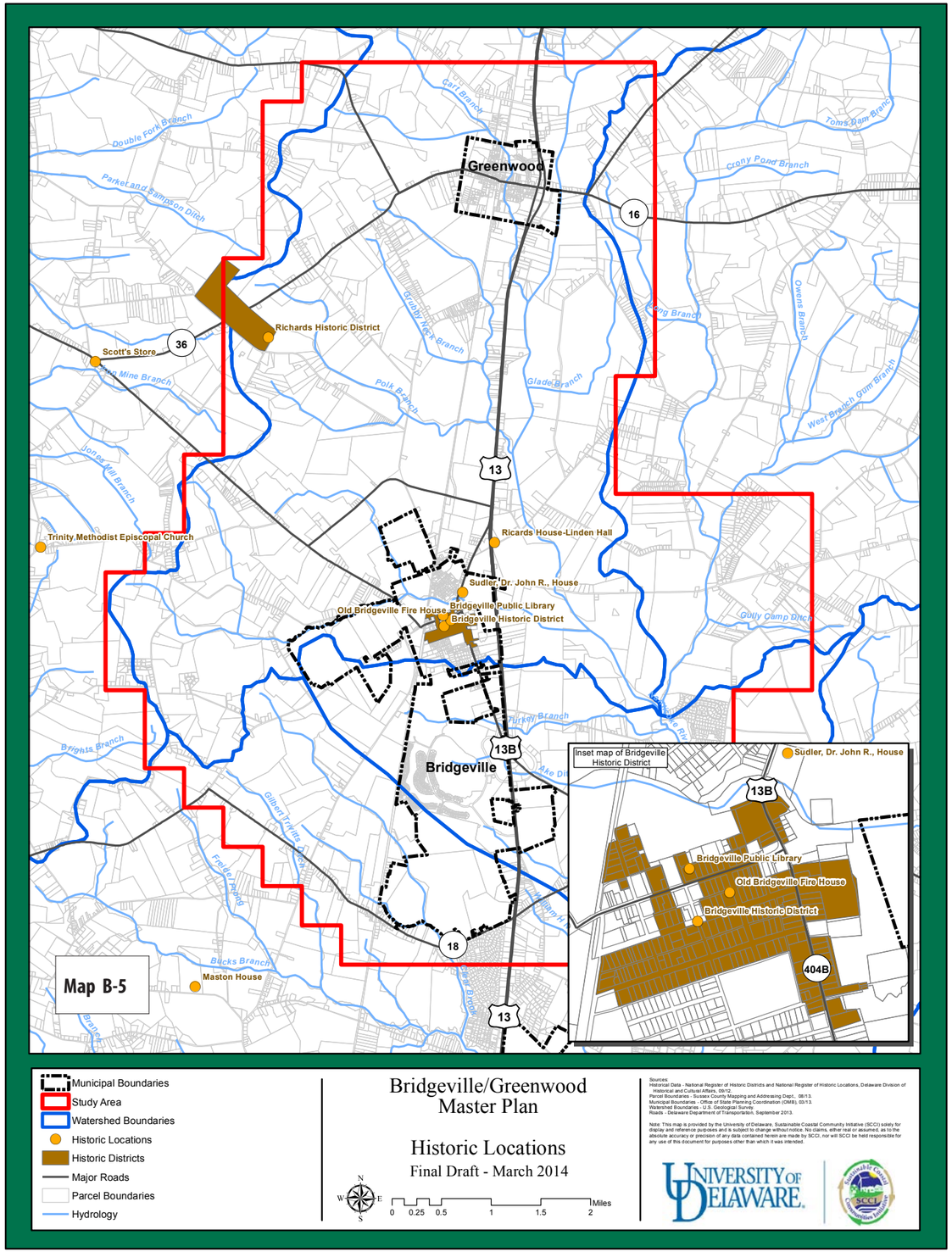

Greenwood
Bridgeville
16
36
13
404B
13B
404
18
Double Fork Branch
Parker and Ramson Ditch
Carr Branch
Crony Pond Branch
Toms Dam Branch
Owens Branch
Glade Branch
Polk Branch
Jones Mill Branch
Brights Branch
Gilbert Trivitts Ditch
Freeler Pond
Bucks Branch
Gully Camp Ditch
Map B-4
2010 State Investment Strategies
Level 1
Level 2
Level 3
Level 4
Out of Play
Ag Preservation Mode
DISTRICT
EASEMENT
EXPANSION
Municipal Boundaries
Study Area
Watershed Boundaries
Major Roads
Parcel Boundaries
Hydrology
Bridgeville/Greenwood
Master Plan
2010 Investment Strategies
for Policies & Spending
Final Draft - March 2014
0 0.25 0.5 1 1.5 2 Miles
Sources:
Agricultural Easements - Delaware Department of Agriculture, 03/14.
State Investment Strategies - Office of State Planning Coordination (OMB), 09/10.
Parcel Boundaries - Sussex County Mapping and Addressing Dept., 08/13.
Municipal Boundaries - Office of State Planning Coordination (OMB), 03/13.
Watershed Boundaries - U.S. Geological Survey.
Composite - Developed by the Town of Bridgeville & the Town of Greenwood, created by the UD, Sustainable Coastal Community Initiative (SCCI), 12/13.
Roads - Delaware Department of Transportation, September 2013.
Note: This map is provided by the University of Delaware, Sustainable Coastal Community Initiative (SCCI) solely for display and reference purposes and is subject to change without notice. No claims, either real or assumed, as to the absolute accuracy or precision of any data contained herein are made by SCCI, nor will SCCI be held responsible for any use of this document for purposes other than which it was intended.
University of Delaware
SCCI


Greenwood
Bridgeville
16
36
13
13B
18
404B
Richards Historic District
Scott's Store
Trinity Methodist Episcopal Church
Ricards House-Linden Hall
Sudler, Dr. John R., House
Bridgeville Public Library
Old Bridgeville Fire House
Bridgeville Historic District
Maston House
Double Fork Branch
Parker and Ramson Ditch
Carr Branch
Crony Pond Branch
Toms Dam Branch
Owens Branch
Glade Branch
Polk Branch
Jones Mill Branch
Brights Branch
Gilbert Trivitts Ditch
Freeler Pond
Bucks Branch
Gully Camp Ditch
Turkey Branch
Map B-5
Inset map of Bridgeville Historic District
Municipal Boundaries
Study Area
Watershed Boundaries
Historic Locations
Historic Districts
Major Roads
Parcel Boundaries
Hydrology
Bridgeville/Greenwood
Master Plan
Historic Locations
Final Draft - March 2014
0 0.25 0.5 1 1.5 2 Miles
Sources:
Historical Data - National Register of Historic Districts and National Register of Historic Locations, Delaware Division of Historical and Cultural Affairs, 09/12.
Parcel Boundaries - Sussex County Mapping and Addressing Dept., 08/13.
Municipal Boundaries - Office of State Planning Coordination (OMB), 03/13.
Watershed Boundaries - U.S. Geological Survey.
Roads - Delaware Department of Transportation, September 2013.
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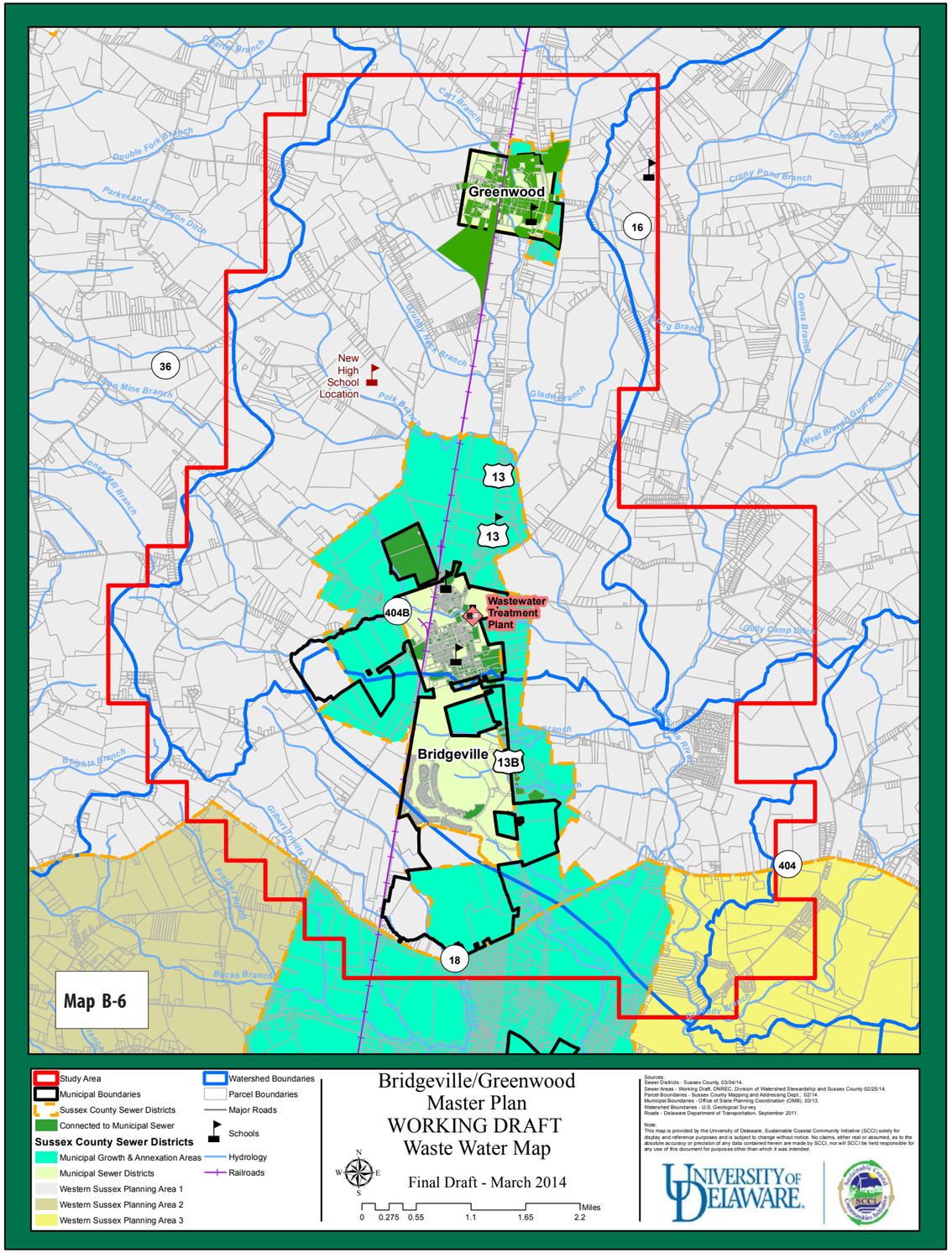
University of Delaware
SCCI


Greenwood
Bridgeville
New High School Location
Wastewater Treatment Plant
16
36
13
13
404B
13B
404
18
Double Fork Branch
Parker and Ramson Ditch
Cart Branch
Cronly Pond Branch
Owens Branch
Glade Branch
Cronly West Branch
Polk Branch
Frog Mine Branch
West Branch Gum Branch
Golly Camp Ditch
Brights Branch
Gilbert Pointe
Blacks Branch
Map B-6
Study Area
Municipal Boundaries
Sussex County Sewer Districts
Connected to Municipal Sewer
Sussex County Sewer Districts
Municipal Growth & Annexation Areas
Municipal Sewer Districts
Western Sussex Planning Area 1
Western Sussex Planning Area 2
Western Sussex Planning Area 3
Watershed Boundaries
Parcel Boundaries
Major Roads
Schools
Hydrology
Railroads
Bridgeville/Greenwood
Master Plan
WORKING DRAFT
Waste Water Map
Final Draft - March 2014
0 0.275 0.55 1.1 1.65 2.2 Miles
Sources:
Sewer Districts - Sussex County, 03/04/14.
Sewer Areas - Working Draft, DNREC, Division of Watershed Stewardship and Sussex County 02/25/14.
Parcel Boundaries - Sussex County Mapping and Addressing Dept., 02/14.
Municipal Boundaries - Office of State Planning Coordination (OMB), 03/13.
Watershed Boundaries - U.S. Geological Survey.
Roads - Delaware Department of Transportation, September 2011.
Note:
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University of Delaware
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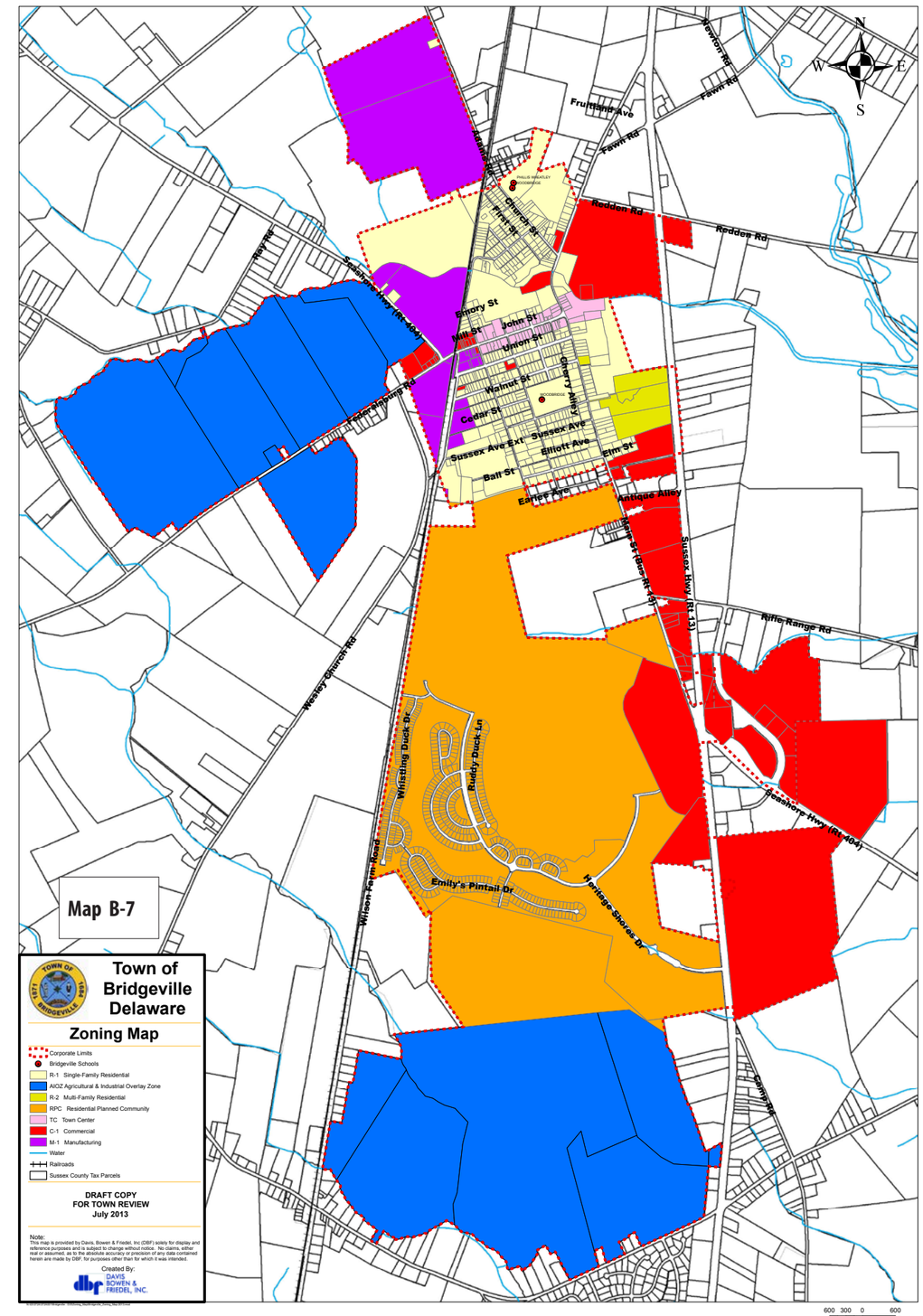
N
S
E
W
Fruitland Ave
Fawn Rd
Redden Rd
Church St
Fire St
Hay Rd
Seaford Hwy (Rt 404)
Emory St
John St
Mill St
Union St
Walnut St
Cherry Alley
Cedar St
Sussex Ave
Sussex Ave Ext
Elliott Ave
Elm St
Ball St
Earles Ave
Antique Alley
Fader Springs Rd
Sussex Hwy (Rt 13)
Rifle Range Rd
Wesley Church Rd
Whistling Duck Dr
Ruddy Duck Ln
Bashors Hwy (Rt 404)
Wilson Farm Road
Emily's Pintail Dr
Heritage Shores Dr
Camp Rd
Map B-7
Town of Bridgeville Delaware
Zoning Map
Corporate Limits
Bridgeville Schools
R-1 Single-Family Residential
AIOZ Agricultural & Industrial Overlay Zone
R-2 Multi-Family Residential
RPC Residential Planned Community
TC Town Center
C-1 Commercial
M-1 Manufacturing
Water
Railroads
Sussex County Tax Parcels
DRAFT COPY
FOR TOWN REVIEW
July 2013
Note:
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Created By:
DAVIS BOWEN & FRIEDEL, INC.
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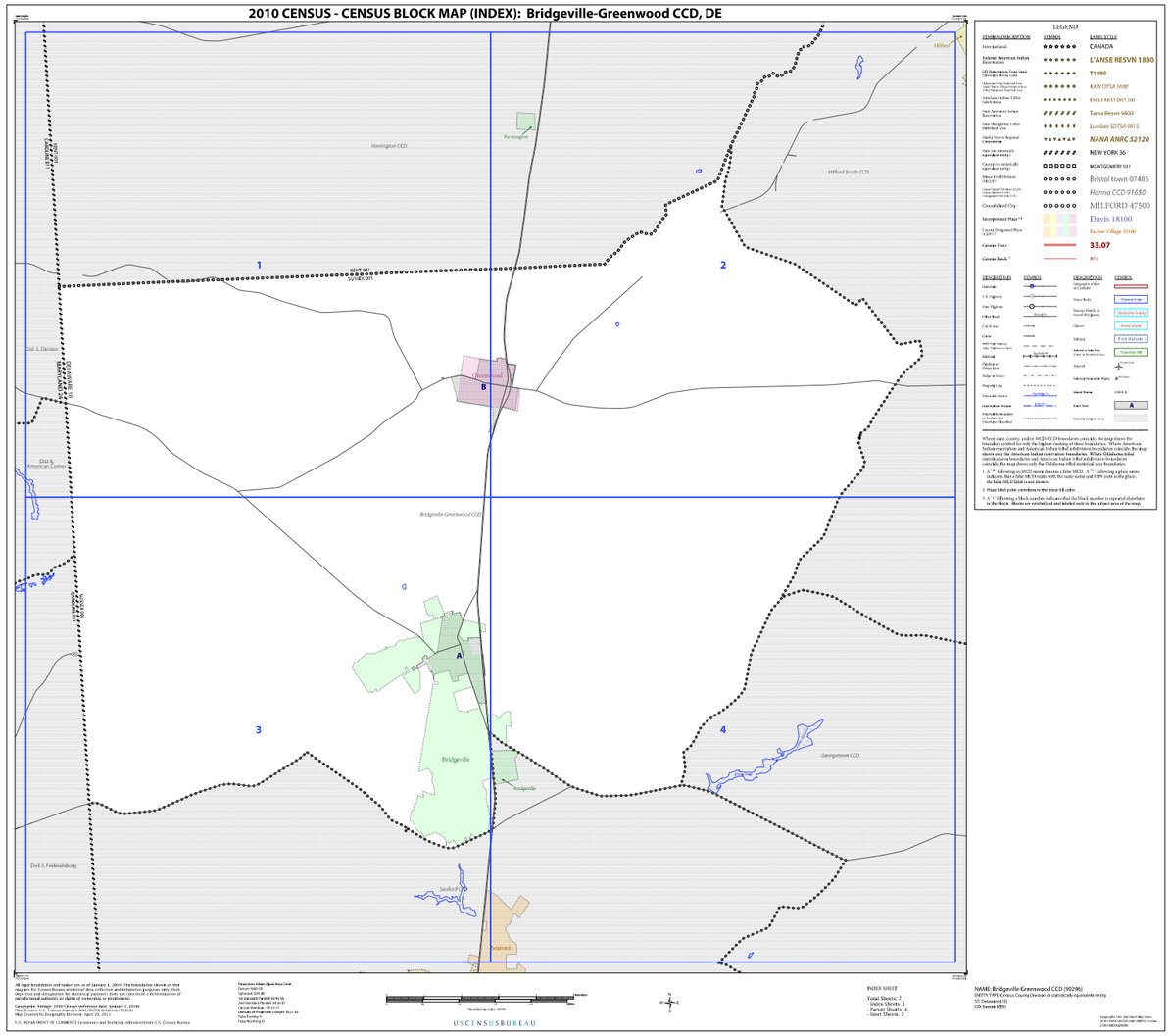
Feet

Appendix C



The Bridgeville-Greenwood County Census Division (CCD). This area roughly coincides with the Master Plan study area and is the basis for all Census data included in this plan.

DP03: SELECTED ECONOMIC CHARACTERISTICS

2008-2012 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

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.

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	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County, Delaware			
	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent
EMPLOYMENT STATUS												
Population 16 years and over	718,553	+/-657	718,553	(X)	161,850	+/-265	161,850	(X)	8,822	+/-595	8,822	(X)
In labor force	464,607	+/-2,681	64.7%	+/-0.4	94,893	+/-1,197	58.6%	+/-0.7	5,128	+/-437	58.1%	+/-3.3
Civilian labor force	460,810	+/-2,649	64.1%	+/-0.4	94,672	+/-1,213	58.5%	+/-0.7	5,104	+/-435	57.9%	+/-3.3
Employed	422,219	+/-2,705	58.8%	+/-0.4	86,739	+/-1,303	53.6%	+/-0.8	4,661	+/-401	52.8%	+/-3.2
Unemployed	38,591	+/-1,331	5.4%	+/-0.2	7,933	+/-637	4.9%	+/-0.4	443	+/-132	5.0%	+/-1.4
Armed Forces	3,797	+/-459	0.5%	+/-0.1	221	+/-99	0.1%	+/-0.1	24	+/-27	0.3%	+/-0.3
Not in labor force	253,946	+/-2,706	35.3%	+/-0.4	66,957	+/-1,181	41.4%	+/-0.7	3,694	+/-398	41.9%	+/-3.3
Civilian labor force	460,810	+/-2,649	460,810	(X)	94,672	+/-1,213	94,672	(X)	5,104	+/-435	5,104	(X)
Percent Unemployed	(X)	(X)	8.4%	+/-0.3	(X)	(X)	8.4%	+/-0.7	(X)	(X)	8.7%	+/-2.4
Females 16 years and over	374,993	+/-465	374,993	(X)	83,765	+/-203	83,765	(X)	4,458	+/-265	4,458	(X)
In labor force	227,746	+/-2,016	60.7%	+/-0.5	45,889	+/-875	54.8%	+/-1.0	2,462	+/-246	55.2%	+/-4.5
Civilian labor force	227,154	+/-1,999	60.6%	+/-0.5	45,884	+/-875	54.8%	+/-1.0	2,462	+/-246	55.2%	+/-4.5
Employed	209,563	+/-2,142	55.9%	+/-0.6	42,229	+/-909	50.4%	+/-1.1	2,165	+/-226	48.6%	+/-4.3
Own children under 6 years	63,953	+/-728	63,953	(X)	12,732	+/-359	12,732	(X)	945	+/-254	945	(X)
All parents in family in labor force	45,764	+/-1,282	71.6%	+/-1.7	9,320	+/-543	73.2%	+/-3.7	550	+/-172	58.2%	+/-12.9
Own children 6 to 17 years	129,870	+/-969	129,870	(X)	24,572	+/-471	24,572	(X)	1,802	+/-333	1,802	(X)
All parents in family in labor force	100,096	+/-1,765	77.1%	+/-1.2	18,278	+/-735	74.4%	+/-2.7	1,144	+/-267	63.5%	+/-12.7
OCCUPATION												
Civilian employed population 16 years and over	422,219	+/-2,705	422,219	(X)	86,739	+/-1,303	86,739	(X)	4,661	+/-401	4,661	(X)
Management, business, science, and arts occupations	157,671	+/-2,264	37.3%	+/-0.5	25,703	+/-1,053	29.6%	+/-1.1	1,313	+/-216	28.2%	+/-4.4
Service occupations	75,746	+/-2,033	17.9%	+/-0.5	18,559	+/-1,245	21.4%	+/-1.4	890	+/-172	19.1%	+/-3.2
Sales and office occupations	106,191	+/-2,063	25.2%	+/-0.5	21,783	+/-880	25.1%	+/-0.9	1,007	+/-160	21.6%	+/-3.0
Natural resources, construction, and maintenance occupations	37,930	+/-1,388	9.0%	+/-0.3	9,902	+/-710	11.4%	+/-0.9	717	+/-197	15.4%	+/-4.0
Production, transportation, and material moving occupations	44,681	+/-1,744	10.6%	+/-0.4	10,792	+/-706	12.4%	+/-0.8	734	+/-188	15.7%	+/-3.5
INDUSTRY												
Civilian employed population 16 years and over	422,219	+/-2,705	422,219	(X)	86,739	+/-1,303	86,739	(X)	4,661	+/-401	4,661	(X)
Agriculture, forestry, fishing and hunting, and mining	4,614	+/-530	1.1%	+/-0.1	2,299	+/-357	2.7%	+/-0.4	218	+/-103	4.7%	+/-2.2
Construction	28,198	+/-1,192	6.7%	+/-0.3	7,816	+/-610	9.0%	+/-0.7	455	+/-157	9.8%	+/-3.4
Manufacturing	39,784	+/-1,470	9.4%	+/-0.3	8,068	+/-671	9.3%	+/-0.8	554	+/-190	11.9%	+/-4.0
Wholesale trade	8,970	+/-586	2.1%	+/-0.1	1,780	+/-275	2.1%	+/-0.3	172	+/-60	3.7%	+/-1.3
Retail trade	51,112	+/-1,577	12.1%	+/-0.4	12,704	+/-798	14.6%	+/-0.9	646	+/-167	13.9%	+/-3.4
Transportation and warehousing, and utilities	19,446	+/-1,132	4.6%	+/-0.3	3,686	+/-356	4.2%	+/-0.4	342	+/-115	7.3%	+/-2.1
Information	7,826	+/-707	1.9%	+/-0.2	1,305	+/-271	1.5%	+/-0.3	134	+/-93	2.9%	+/-1.9
Finance and insurance, and real estate and rental and leasing	42,149	+/-1,287	10.0%	+/-0.3	5,401	+/-680	6.2%	+/-0.8	138	+/-67	3.0%	+/-1.4
Professional, scientific, and management, and administrative and waste	41,138	+/-1,675	9.7%	+/-0.4	7,248	+/-933	8.4%	+/-1.0	209	+/-87	4.5%	+/-1.8
Educational services, and health care and social assistance	99,818	+/-2,445	23.6%	+/-0.5	18,404	+/-744	21.2%	+/-0.8	1,053	+/-229	22.6%	+/-4.4
Arts, entertainment, and recreation, and accommodation and food	36,833	+/-1,277	8.7%	+/-0.3	8,873	+/-781	10.2%	+/-0.9	317	+/-102	6.8%	+/-2.1
Other services, except public administration	18,233	+/-974	4.3%	+/-0.2	4,497	+/-427	5.2%	+/-0.5	149	+/-66	3.2%	+/-1.4
Public administration	24,098	+/-1,231	5.7%	+/-0.3	4,658	+/-439	5.4%	+/-0.5	274	+/-118	5.9%	+/-2.5
CLASS OF WORKER												
Civilian employed population 16 years and over	422,219	+/-2,705	422,219	(X)	86,739	+/-1,303	86,739	(X)	4,661	+/-401	4,661	(X)
Private wage and salary workers	342,999	+/-3,075	81.2%	+/-0.5	68,675	+/-1,352	79.2%	+/-1.0	3,791	+/-399	81.3%	+/-3.6
Government workers	61,820	+/-2,011	14.6%	+/-0.5	12,161	+/-717	14.0%	+/-0.8	561	+/-130	12.0%	+/-2.7
Self-employed in own not incorporated business workers	16,915	+/-876	4.0%	+/-0.2	5,837	+/-444	6.7%	+/-0.5	305	+/-107	6.5%	+/-2.4
Unpaid family workers	485	+/-147	0.1%	+/-0.1	66	+/-45	0.1%	+/-0.1	4	+/-6	0.1%	+/-0.1
INCOME AND BENEFITS (IN 2012 INFLATION-ADJUSTED DOLLARS)												
Total households	334,076	+/-1,667	334,076	(X)	75,642	+/-1,035	75,642	(X)	3,928	+/-189	3,928	(X)
Less than $10,000	18,128	+/-849	5.4%	+/-0.2	4,091	+/-419	5.4%	+/-0.5	277	+/-120	7.1%	+/-3.1
$10,000 to $14,999	13,605	+/-641	4.1%	+/-0.2	3,267	+/-321	4.3%	+/-0.4	187	+/-58	4.8%	+/-1.5
$15,000 to $24,999	30,561	+/-1,194	9.1%	+/-0.4	8,711	+/-582	11.5%	+/-0.7	374	+/-105	9.5%	+/-2.5
$25,000 to $34,999	32,054	+/-1,330	9.6%	+/-0.4	8,826	+/-623	11.7%	+/-0.8	467	+/-124	11.9%	+/-3.0
$35,000 to $49,999	43,859	+/-1,360	13.1%	+/-0.4	10,692	+/-641	14.1%	+/-0.8	597	+/-129	15.2%	+/-3.2

Subject	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County, Delaware			
	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent
$50,000 to $74,999	64,576	+/-1,552	19.3%	+/-0.4	15,823	+/-689	20.9%	+/-0.9	869	+/-166	22.1%	+/-4.2
$75,000 to $99,999	46,209	+/-1,279	13.8%	+/-0.4	9,839	+/-616	13.0%	+/-0.8	464	+/-109	11.8%	+/-2.7
$100,000 to $149,999	51,586	+/-1,500	15.4%	+/-0.5	9,237	+/-521	12.2%	+/-0.7	491	+/-142	12.5%	+/-3.6
$150,000 to $199,999	18,288	+/-774	5.5%	+/-0.2	2,718	+/-279	3.6%	+/-0.4	148	+/-73	3.8%	+/-1.8
$200,000 or more	15,210	+/-692	4.6%	+/-0.2	2,438	+/-236	3.2%	+/-0.3	54	+/-34	1.4%	+/-0.9
Median household income (dollars)	60,119	+/-714	(X)	(X)	52,692	+/-1,013	(X)	(X)	51,824	+/-5,451	(X)	(X)
Mean household income (dollars)	77,453	+/-803	(X)	(X)	67,390	+/-1,102	(X)	(X)	62,245	+/-5,073	(X)	(X)
Families	225,798	+/-2,098	225,798	(X)	50,860	+/-1,063	50,860	(X)	2,865	+/-190	2,865	(X)
Less than $10,000	7,169	+/-550	3.2%	+/-0.2	1,861	+/-253	3.7%	+/-0.5	181	+/-97	6.3%	+/-3.4
$10,000 to $14,999	4,918	+/-439	2.2%	+/-0.2	1,203	+/-225	2.4%	+/-0.4	45	+/-31	1.6%	+/-1.1
$15,000 to $24,999	14,805	+/-826	6.6%	+/-0.4	4,149	+/-381	8.2%	+/-0.7	214	+/-67	7.5%	+/-2.3
$25,000 to $34,999	18,720	+/-952	8.3%	+/-0.4	5,520	+/-511	10.9%	+/-1.0	308	+/-101	10.8%	+/-3.4
$35,000 to $49,999	27,769	+/-1,014	12.3%	+/-0.4	7,139	+/-417	14.0%	+/-0.8	359	+/-81	12.5%	+/-2.9
$50,000 to $74,999	44,138	+/-1,270	19.5%	+/-0.5	11,241	+/-563	22.1%	+/-1.0	696	+/-138	24.3%	+/-4.8
$75,000 to $99,999	36,557	+/-1,202	16.2%	+/-0.5	8,123	+/-556	16.0%	+/-1.0	419	+/-110	14.6%	+/-3.6
$100,000 to $149,999	42,562	+/-1,318	18.8%	+/-0.6	7,489	+/-466	14.7%	+/-0.9	475	+/-139	16.6%	+/-4.6
$150,000 to $199,999	15,789	+/-707	7.0%	+/-0.3	2,193	+/-264	4.3%	+/-0.5	114	+/-59	4.0%	+/-2.0
$200,000 or more	13,371	+/-642	5.9%	+/-0.3	1,942	+/-202	3.8%	+/-0.4	54	+/-34	1.9%	+/-1.2
Median family income (dollars)	72,069	+/-919	(X)	(X)	61,685	+/-1,454	(X)	(X)	61,031	+/-5,537	(X)	(X)
Mean family income (dollars)	89,415	+/-965	(X)	(X)	75,667	+/-1,435	(X)	(X)	70,405	+/-5,739	(X)	(X)
Per capita income (dollars)	29,733	+/-297	(X)	(X)	27,165	+/-439	(X)	(X)	22,683	+/-1,661	(X)	(X)
Median earnings for workers (dollars)	32,370	+/-321	(X)	(X)	27,077	+/-559	(X)	(X)	29,165	+/-3,300	(X)	(X)
Median earnings for male full-time, year-round workers (dollars)	50,774	+/-489	(X)	(X)	42,957	+/-930	(X)	(X)	43,363	+/-4,719	(X)	(X)
Median earnings for female full-time, year-round workers (dollars)	40,809	+/-523	(X)	(X)	33,935	+/-1,350	(X)	(X)	34,070	+/-2,411	(X)	(X)
PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL												
All families	(X)	(X)	7.6%	+/-0.3	(X)	(X)	8.3%	+/-0.7	(X)	(X)	10.7%	+/-3.7
With related children under 18 years	(X)	(X)	12.9%	+/-0.7	(X)	(X)	17.5%	+/-1.9	(X)	(X)	21.4%	+/-7.3
With related children under 5 years only	(X)	(X)	13.9%	+/-1.7	(X)	(X)	23.4%	+/-5.3	(X)	(X)	25.1%	+/-21.6
Married couple families	(X)	(X)	3.0%	+/-0.2	(X)	(X)	3.7%	+/-0.5	(X)	(X)	4.4%	+/-2.3
With related children under 18 years	(X)	(X)	4.8%	+/-0.6	(X)	(X)	7.8%	+/-1.6	(X)	(X)	9.5%	+/-5.5
With related children under 5 years only	(X)	(X)	3.8%	+/-1.3	(X)	(X)	6.2%	+/-3.8	(X)	(X)	5.3%	+/-7.7
Families with female householder, no husband present	(X)	(X)	22.5%	+/-1.3	(X)	(X)	26.4%	+/-2.9	(X)	(X)	36.1%	+/-13.4
With related children under 18 years	(X)	(X)	29.4%	+/-1.9	(X)	(X)	36.6%	+/-4.6	(X)	(X)	49.5%	+/-17.1
With related children under 5 years only	(X)	(X)	38.9%	+/-5.7	(X)	(X)	53.0%	+/-12.0	(X)	(X)	49.0%	+/-31.6

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.

There were changes in the edit between 2009 and 2010 regarding Supplemental Security Income (SSI) and Social Security. The changes in the edit loosened restrictions on disability requirements for receipt of SSI resulting in an increase in the total number of SSI recipients in the American Community Survey. The changes also loosened restrictions on possible reported monthly amounts in Social Security income resulting in higher Social Security aggregate amounts. These results more closely match administrative counts compiled by the Social Security Administration.

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

Industry codes are 4-digit codes and are based on the North American Industry Classification System 2007. The Industry categories adhere to the guidelines issued in Clarification Memorandum No. 2, "NAICS Alternate Aggregation Structure for Use By U.S. Statistical Agencies," issued by the Office of Management and Budget.

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
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.

DP05: ACS SEX, AGE AND RACE ESTIMATES

2008-2012 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

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.

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	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County,			
	Estimate	Margin of Error	Percent	Percent Margin of Error	Estimate	Margin of Error	Percent	Percent Margin of Error	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE												
Total population	900,131	*****	900,131	(X)	197,681	*****	197,681	(X)	11,390	+/-776	11,390	(X)
Male	436,338	+/-130	48.5%	+/-0.1	96,427	+/-60	48.8%	+/-0.1	5,588	+/-531	49.1%	+/-2.1
Female	463,793	+/-130	51.5%	+/-0.1	101,254	+/-60	51.2%	+/-0.1	5,802	+/-368	50.9%	+/-2.1
Under 5 years	56,062	+/-111	6.2%	+/-0.1	11,495	+/-92	5.8%	+/-0.1	812	+/-214	7.1%	+/-1.8
5 to 9 years	57,471	+/-1,426	6.4%	+/-0.2	10,899	+/-447	5.5%	+/-0.2	738	+/-163	6.5%	+/-1.3
10 to 14 years	55,956	+/-1,426	6.2%	+/-0.2	11,056	+/-437	5.6%	+/-0.2	813	+/-186	7.1%	+/-1.5
15 to 19 years	63,565	+/-214	7.1%	+/-0.1	10,953	+/-169	5.5%	+/-0.1	851	+/-207	7.5%	+/-1.7
20 to 24 years	63,746	+/-211	7.1%	+/-0.1	10,481	+/-175	5.3%	+/-0.1	549	+/-166	4.8%	+/-1.3
25 to 34 years	112,300	+/-271	12.5%	+/-0.1	20,418	+/-226	10.3%	+/-0.1	1,264	+/-192	11.1%	+/-1.6
35 to 44 years	116,073	+/-264	12.9%	+/-0.1	22,268	+/-219	11.3%	+/-0.1	1,416	+/-236	12.4%	+/-1.8
45 to 54 years	132,405	+/-128	14.7%	+/-0.1	28,148	+/-71	14.2%	+/-0.1	1,823	+/-290	16.0%	+/-2.3
55 to 59 years	58,161	+/-1,141	6.5%	+/-0.1	14,203	+/-586	7.2%	+/-0.3	587	+/-105	5.2%	+/-1.0
60 to 64 years	53,515	+/-1,163	5.9%	+/-0.1	16,051	+/-586	8.1%	+/-0.3	850	+/-174	7.5%	+/-1.5
65 to 74 years	73,768	+/-164	8.2%	+/-0.1	24,782	+/-87	12.5%	+/-0.1	1,118	+/-178	9.8%	+/-1.6
75 to 84 years	40,834	+/-721	4.5%	+/-0.1	12,348	+/-416	6.2%	+/-0.2	427	+/-96	3.7%	+/-0.9
85 years and over	16,275	+/-715	1.8%	+/-0.1	4,579	+/-414	2.3%	+/-0.2	142	+/-98	1.2%	+/-0.8
Median age (years)	38.7	+/-0.2	(X)	(X)	45.4	+/-0.2	(X)	(X)	40.1	+/-2.4	(X)	(X)
18 years and over	694,530	*****	77.2%	*****	157,367	*****	79.6%	*****	8,426	+/-540	74.0%	+/-2.5
21 years and over	652,411	+/-792	72.5%	+/-0.1	151,103	+/-339	76.4%	+/-0.2	8,091	+/-551	71.0%	+/-2.6
62 years and over	162,119	+/-933	18.0%	+/-0.1	51,121	+/-426	25.9%	+/-0.2	2,178	+/-216	19.1%	+/-2.0
65 years and over	130,877	+/-135	14.5%	+/-0.1	41,709	*****	21.1%	*****	1,687	+/-203	14.8%	+/-1.9
18 years and over	694,530	*****	694,530	(X)	157,367	*****	157,367	(X)	8,426	+/-540	8,426	(X)
Male	331,320	*****	47.7%	*****	75,895	*****	48.2%	*****	4,111	+/-405	48.8%	+/-2.4
Female	363,210	*****	52.3%	*****	81,472	*****	51.8%	*****	4,315	+/-243	51.2%	+/-2.4
65 years and over	130,877	+/-135	130,877	(X)	41,709	*****	41,709	(X)	1,687	+/-203	1,687	(X)
Male	57,377	+/-88	43.8%	+/-0.1	19,178	*****	46.0%	*****	812	+/-134	48.1%	+/-4.7
Female	73,500	+/-79	56.2%	+/-0.1	22,531	*****	54.0%	*****	875	+/-122	51.9%	+/-4.7
RACE												
Total population	900,131	*****	900,131	(X)	197,681	*****	197,681	(X)	11,390	+/-776	11,390	(X)
One race	879,215	+/-1,498	97.7%	+/-0.2	193,376	+/-546	97.8%	+/-0.3	11,033	+/-755	96.9%	+/-1.4
Two or more races	20,916	+/-1,498	2.3%	+/-0.2	4,305	+/-546	2.2%	+/-0.3	357	+/-166	3.1%	+/-1.4
White	652,133	+/-1,965	72.4%	+/-0.2	161,627	+/-1,222	81.8%	+/-0.6	8,965	+/-781	78.7%	+/-4.0
Black or African American	205,367	+/-1,036	22.8%	+/-0.1	27,918	+/-443	14.1%	+/-0.2	2,204	+/-378	19.4%	+/-3.2
American Indian and Alaska Native	8,109	+/-566	0.9%	+/-0.1	2,000	+/-207	1.0%	+/-0.1	35	+/-39	0.3%	+/-0.3
Asian	33,756	+/-295	3.8%	+/-0.1	2,473	+/-34	1.3%	+/-0.1	78	+/-82	0.7%	+/-0.7
Native Hawaiian and Other Pacific	857	+/-378	0.1%	+/-0.1	109	+/-64	0.1%	+/-0.1	0	+/-18	0.0%	+/-0.3

Subject	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County,			
	Estimate	Margin of Error	Percent	Percent Margin of Error	Estimate	Margin of Error	Percent	Percent Margin of Error	Estimate	Margin of Error	Percent	Percent Margin of Error
Some other race	22,545	+/-1,796	2.5%	+/-0.2	8,081	+/-1,196	4.1%	+/-0.6	465	+/-308	4.1%	+/-2.6
HISPANIC OR LATINO AND RACE												
Total population	900,131	*****	900,131	(X)	197,681	*****	197,681	(X)	11,390	+/-776	11,390	(X)
Hispanic or Latino (of any race)	73,230	*****	8.1%	*****	16,935	*****	8.6%	*****	751	+/-345	6.6%	+/-3.0
Mexican	30,276	+/-1,708	3.4%	+/-0.2	6,240	+/-1,111	3.2%	+/-0.6	299	+/-181	2.6%	+/-1.6
Puerto Rican	22,795	+/-1,544	2.5%	+/-0.2	2,577	+/-522	1.3%	+/-0.3	86	+/-71	0.8%	+/-0.6
Cuban	1,680	+/-455	0.2%	+/-0.1	139	+/-88	0.1%	+/-0.1	0	+/-18	0.0%	+/-0.3
Other Hispanic or Latino	18,479	+/-1,482	2.1%	+/-0.2	7,979	+/-1,159	4.0%	+/-0.6	366	+/-301	3.2%	+/-2.6

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 ACS questions on Hispanic origin and race were revised in 2008 to make them consistent with the Census 2010 question wording. Any changes in estimates for 2008 and beyond may be due to demographic changes, as well as factors including questionnaire changes, differences in ACS population controls, and methodological differences in the population estimates, and therefore should be used with caution. For a summary of questionnaire changes see http://www.census.gov/acs/www/methodology/questionnaire_changes/. For more information about changes in the estimates see http://www.census.gov/population/hispanic/files/acs08researchnote.pdf.

For more information on understanding race and Hispanic origin data, please see the Census 2010 Brief entitled, Overview of Race and Hispanic Origin: 2010, issued March 2011. (pdf format)

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Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

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DP04: SELECTED HOUSING

2008-2012 American Community Survey

Note: This is a modified view of the original table.

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	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County, Delaware			
	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent
HOUSING OCCUPANCY												
Total housing units	405,883	+/-201	405,883	(X)	123,132	+/-143	123,132	(X)	4,509	+/-161	4,509	(X)
Occupied housing units	334,076	+/-1,667	82.3%	+/-0.4	75,642	+/-1,035	61.4%	+/-0.8	3,928	+/-189	87.1%	+/-3.3
Vacant housing units	71,807	+/-1,712	17.7%	+/-0.4	47,490	+/-1,018	38.6%	+/-0.8	581	+/-151	12.9%	+/-3.3
Homeowner vacancy rate	3.0	+/-0.3	(X)	(X)	5.4	+/-0.7	(X)	(X)	4.2	+/-2.4	(X)	(X)
Rental vacancy rate	10.5	+/-0.8	(X)	(X)	8.8	+/-1.8	(X)	(X)	2.2	+/-2.6	(X)	(X)
UNITS IN STRUCTURE												
Total housing units	405,883	+/-201	405,883	(X)	123,132	+/-143	123,132	(X)	4,509	+/-161	4,509	(X)
1-unit, detached	235,932	+/-1,959	58.1%	+/-0.5	75,118	+/-1,029	61.0%	+/-0.8	3,040	+/-186	67.4%	+/-3.5
1-unit, attached	59,843	+/-1,166	14.7%	+/-0.3	10,247	+/-538	8.3%	+/-0.4	158	+/-56	3.5%	+/-1.2
2 units	6,485	+/-536	1.6%	+/-0.1	1,072	+/-206	0.9%	+/-0.2	72	+/-34	1.6%	+/-0.8
3 or 4 units	10,029	+/-638	2.5%	+/-0.2	2,126	+/-317	1.7%	+/-0.3	111	+/-48	2.5%	+/-1.0
5 to 9 units	15,202	+/-874	3.7%	+/-0.2	3,775	+/-461	3.1%	+/-0.4	101	+/-62	2.2%	+/-1.4
10 to 19 units	23,049	+/-1,232	5.7%	+/-0.3	3,179	+/-481	2.6%	+/-0.4	24	+/-27	0.5%	+/-0.6
20 or more units	17,008	+/-807	4.2%	+/-0.2	3,171	+/-350	2.6%	+/-0.3	43	+/-25	1.0%	+/-0.5
Mobile home	38,266	+/-1,042	9.4%	+/-0.3	24,405	+/-883	19.8%	+/-0.7	960	+/-154	21.3%	+/-3.4
Boat, RV, van, etc.	69	+/-46	0.0%	+/-0.1	39	+/-34	0.0%	+/-0.1	0	+/-18	0.0%	+/-0.7
YEAR STRUCTURE BUILT												
Total housing units	405,883	+/-201	405,883	(X)	123,132	+/-143	123,132	(X)	4,509	+/-161	4,509	(X)
Built 2010 or later	1,893	+/-268	0.5%	+/-0.1	904	+/-197	0.7%	+/-0.2	61	+/-66	1.4%	+/-1.5
Built 2000 to 2009	76,984	+/-1,654	19.0%	+/-0.4	35,591	+/-1,047	28.9%	+/-0.9	1,297	+/-155	28.8%	+/-3.2
Built 1990 to 1999	66,327	+/-1,431	16.3%	+/-0.4	23,554	+/-910	19.1%	+/-0.7	950	+/-142	21.1%	+/-3.1
Built 1980 to 1989	60,765	+/-1,742	15.0%	+/-0.4	23,194	+/-1,016	18.8%	+/-0.8	563	+/-139	12.5%	+/-3.0
Built 1970 to 1979	51,639	+/-1,313	12.7%	+/-0.3	16,254	+/-707	13.2%	+/-0.6	576	+/-135	12.8%	+/-3.0
Built 1960 to 1969	46,602	+/-1,132	11.5%	+/-0.3	8,105	+/-629	6.6%	+/-0.5	152	+/-57	3.4%	+/-1.3
Built 1950 to 1959	43,194	+/-1,103	10.6%	+/-0.3	5,597	+/-385	4.5%	+/-0.3	391	+/-101	8.7%	+/-2.2
Built 1940 to 1949	20,343	+/-784	5.0%	+/-0.2	3,047	+/-311	2.5%	+/-0.3	127	+/-52	2.8%	+/-1.2
Built 1939 or earlier	38,136	+/-1,112	9.4%	+/-0.3	6,886	+/-543	5.6%	+/-0.4	392	+/-99	8.7%	+/-2.2
HOUSING TENURE												
Occupied housing units	334,076	+/-1,667	334,076	(X)	75,642	+/-1,035	75,642	(X)	3,928	+/-189	3,928	(X)
Owner-occupied	242,788	+/-2,110	72.7%	+/-0.5	59,913	+/-878	79.2%	+/-0.8	2,989	+/-227	76.1%	+/-4.7
Renter-occupied	91,288	+/-1,812	27.3%	+/-0.5	15,729	+/-688	20.8%	+/-0.8	939	+/-192	23.9%	+/-4.7
Average household size of owner-	2.64	+/-0.02	(X)	(X)	2.45	+/-0.04	(X)	(X)	2.86	+/-0.18	(X)	(X)
Average household size of renter-	2.56	+/-0.03	(X)	(X)	3.02	+/-0.10	(X)	(X)	2.94	+/-0.35	(X)	(X)
OCCUPANTS PER ROOM												
Occupied housing units	334,076	+/-1,667	334,076	(X)	75,642	+/-1,035	75,642	(X)	3,928	+/-189	3,928	(X)
1.00 or less	328,187	+/-1,762	98.2%	+/-0.2	74,446	+/-1,040	98.4%	+/-0.3	3,842	+/-192	97.8%	+/-1.8
1.01 to 1.50	4,526	+/-485	1.4%	+/-0.1	798	+/-191	1.1%	+/-0.3	82	+/-71	2.1%	+/-1.8
1.51 or more	1,363	+/-258	0.4%	+/-0.1	398	+/-152	0.5%	+/-0.2	4	+/-7	0.1%	+/-0.2
VALUE												
Owner-occupied units	242,788	+/-2,110	242,788	(X)	59,913	+/-878	59,913	(X)	2,989	+/-227	2,989	(X)
Less than $50,000	15,617	+/-692	6.4%	+/-0.3	6,096	+/-410	10.2%	+/-0.6	302	+/-83	10.1%	+/-2.7
$50,000 to $99,999	9,937	+/-603	4.1%	+/-0.2	3,638	+/-312	6.1%	+/-0.5	145	+/-60	4.9%	+/-2.0
$100,000 to $149,999	21,059	+/-781	8.7%	+/-0.3	5,150	+/-398	8.6%	+/-0.7	294	+/-84	9.8%	+/-2.7
$150,000 to $199,999	39,768	+/-1,054	16.4%	+/-0.4	7,962	+/-514	13.3%	+/-0.9	559	+/-145	18.7%	+/-4.3
$200,000 to $299,999	77,822	+/-1,593	32.1%	+/-0.5	15,521	+/-635	25.9%	+/-0.9	973	+/-164	32.6%	+/-4.9

Subject	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County, Delaware			
	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent
$300,000 to $499,999	60,288	+/-1,377	24.8%	+/-0.5	14,254	+/-622	23.8%	+/-1.0	608	+/-128	20.3%	+/-4.1
$500,000 to $999,999	14,764	+/-616	6.1%	+/-0.2	5,528	+/-307	9.2%	+/-0.5	53	+/-46	1.8%	+/-1.5
$1,000,000 or more	3,533	+/-325	1.5%	+/-0.1	1,764	+/-270	2.9%	+/-0.4	55	+/-36	1.8%	+/-1.2
Median (dollars)	241,100	+/-1,422	(X)	(X)	241,800	+/-3,995	(X)	(X)	216,100	+/-12,182	(X)	(X)
MORTGAGE STATUS												
Owner-occupied units	242,788	+/-2,110	242,788	(X)	59,913	+/-878	59,913	(X)	2,989	+/-227	2,989	(X)
Housing units with a mortgage	169,922	+/-1,734	70.0%	+/-0.4	35,462	+/-783	59.2%	+/-1.0	1,804	+/-198	60.4%	+/-4.7
Housing units without a mortgage	72,866	+/-1,298	30.0%	+/-0.4	24,451	+/-686	40.8%	+/-1.0	1,185	+/-164	39.6%	+/-4.7
SELECTED MONTHLY OWNER COSTS												
Housing units with a mortgage	169,922	+/-1,734	169,922	(X)	35,462	+/-783	35,462	(X)	1,804	+/-198	1,804	(X)
Less than $300	192	+/-69	0.1%	+/-0.1	62	+/-31	0.2%	+/-0.1	0	+/-18	0.0%	+/-1.6
$300 to $499	2,062	+/-290	1.2%	+/-0.2	680	+/-157	1.9%	+/-0.4	14	+/-14	0.8%	+/-0.8
$500 to $699	5,627	+/-469	3.3%	+/-0.3	2,018	+/-268	5.7%	+/-0.7	99	+/-44	5.5%	+/-2.4
$700 to $999	16,353	+/-703	9.6%	+/-0.4	4,551	+/-343	12.8%	+/-0.9	312	+/-109	17.3%	+/-5.6
$1,000 to $1,499	48,502	+/-1,246	28.5%	+/-0.7	10,983	+/-542	31.0%	+/-1.3	649	+/-140	36.0%	+/-6.8
$1,500 to $1,999	46,479	+/-1,166	27.4%	+/-0.6	8,657	+/-471	24.4%	+/-1.3	407	+/-86	22.6%	+/-4.8
$2,000 or more	50,707	+/-1,092	29.8%	+/-0.6	8,511	+/-511	24.0%	+/-1.3	323	+/-100	17.9%	+/-4.8
Median (dollars)	1,618	+/-9	(X)	(X)	1,474	+/-23	(X)	(X)	1,354	+/-83	(X)	(X)
Housing units without a mortgage	72,866	+/-1,298	72,866	(X)	24,451	+/-686	24,451	(X)	1,185	+/-164	1,185	(X)
Less than $100	276	+/-108	0.4%	+/-0.1	71	+/-57	0.3%	+/-0.2	0	+/-18	0.0%	+/-2.5
$100 to $199	3,786	+/-375	5.2%	+/-0.5	1,544	+/-211	6.3%	+/-0.9	103	+/-61	8.7%	+/-5.1
$200 to $299	11,872	+/-737	16.3%	+/-1.0	4,385	+/-432	17.9%	+/-1.6	385	+/-130	32.5%	+/-8.8
$300 to $399	14,933	+/-773	20.5%	+/-1.0	4,706	+/-299	19.2%	+/-1.1	197	+/-69	16.6%	+/-5.6
$400 or more	41,999	+/-1,128	57.6%	+/-1.1	13,745	+/-613	56.2%	+/-1.9	500	+/-117	42.2%	+/-9.0
Median (dollars)	443	+/-6	(X)	(X)	437	+/-10	(X)	(X)	352	+/-55	(X)	(X)
SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME												
Housing units with a mortgage	169,246	+/-1,741	169,246	(X)	35,359	+/-791	35,359	(X)	1,804	+/-198	1,804	(X)
Less than 20.0 percent	59,941	+/-1,453	35.4%	+/-0.8	11,396	+/-607	32.2%	+/-1.7	589	+/-103	32.6%	+/-4.4
20.0 to 24.9 percent	27,688	+/-994	16.4%	+/-0.6	5,163	+/-424	14.6%	+/-1.1	264	+/-100	14.6%	+/-5.1
25.0 to 29.9 percent	21,874	+/-1,041	12.9%	+/-0.6	4,452	+/-425	12.6%	+/-1.1	142	+/-62	7.9%	+/-3.4
30.0 to 34.9 percent	14,373	+/-673	8.5%	+/-0.4	3,102	+/-296	8.8%	+/-0.8	189	+/-63	10.5%	+/-3.3
35.0 percent or more	45,370	+/-1,314	26.8%	+/-0.7	11,246	+/-658	31.8%	+/-1.6	620	+/-130	34.4%	+/-6.6
Not computed	676	+/-156	(X)	(X)	103	+/-45	(X)	(X)	0	+/-18	(X)	(X)
GROSS RENT												
Occupied units paying rent	86,868	+/-1,761	86,868	(X)	13,960	+/-652	13,960	(X)	805	+/-181	805	(X)
Less than $200	1,582	+/-300	1.8%	+/-0.4	189	+/-72	1.4%	+/-0.5	15	+/-20	1.9%	+/-2.5
$200 to $299	2,546	+/-325	2.9%	+/-0.4	514	+/-125	3.7%	+/-0.9	75	+/-42	9.3%	+/-5.0
$300 to $499	4,900	+/-470	5.6%	+/-0.5	1,186	+/-221	8.5%	+/-1.5	110	+/-51	13.7%	+/-5.7
$500 to $749	11,090	+/-830	12.8%	+/-0.9	2,461	+/-395	17.6%	+/-2.6	156	+/-60	19.4%	+/-7.2
$750 to $999	24,897	+/-1,101	28.7%	+/-1.2	3,499	+/-417	25.1%	+/-2.7	229	+/-94	28.4%	+/-10.7
$1,000 to $1,499	31,064	+/-1,097	35.8%	+/-1.1	4,464	+/-443	32.0%	+/-2.9	212	+/-108	26.3%	+/-10.6
$1,500 or more	10,789	+/-681	12.4%	+/-0.7	1,647	+/-275	11.8%	+/-1.9	8	+/-15	1.0%	+/-1.8
Median (dollars)	985	+/-10	(X)	(X)	947	+/-22	(X)	(X)	818	+/-79	(X)	(X)
No rent paid	4,420	+/-339	(X)	(X)	1,769	+/-253	(X)	(X)	134	+/-72	(X)	(X)
GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI)												
Occupied units paying rent (excluding	85,254	+/-1,743	85,254	(X)	13,803	+/-643	13,803	(X)	801	+/-181	801	(X)
Less than 15.0 percent	9,523	+/-678	11.2%	+/-0.8	1,467	+/-273	10.6%	+/-1.9	156	+/-63	19.5%	+/-7.4
15.0 to 19.9 percent	10,434	+/-727	12.2%	+/-0.8	1,384	+/-210	10.0%	+/-1.5	63	+/-43	7.9%	+/-5.0
20.0 to 24.9 percent	10,423	+/-815	12.2%	+/-0.9	1,821	+/-314	13.2%	+/-2.2	88	+/-62	11.0%	+/-7.5

Subject	Delaware				Sussex County, Delaware				Bridgeville-Greenwood CCD, Sussex County, Delaware			
	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent	Estimate	Margin of	Percent	Percent
25.0 to 29.9 percent	10,341	+/-642	12.1%	+/-0.8	1,821	+/-292	13.2%	+/-2.0	107	+/-60	13.4%	+/-6.9
30.0 to 34.9 percent	8,395	+/-532	9.8%	+/-0.6	1,241	+/-195	9.0%	+/-1.4	61	+/-40	7.6%	+/-4.6
35.0 percent or more	36,138	+/-1,247	42.4%	+/-1.2	6,069	+/-487	44.0%	+/-2.7	326	+/-123	40.7%	+/-11.8
Not computed	6,034	+/-403	(X)	(X)	1,926	+/-266	(X)	(X)	138	+/-71	(X)	(X)

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The median gross rent excludes no cash renters.

In prior years, the universe included all owner-occupied units with a mortgage. It is now restricted to include only those units where SMOCAPI is computed, that is, SMOC and household income are valid values.

In prior years, the universe included all owner-occupied units without a mortgage. It is now restricted to include only those units where SMOCAPI is computed, that is, SMOC and household income are valid values.

In prior years, the universe included all renter-occupied units. It is now restricted to include only those units where GRAPI is computed, that is, gross rent and household Income are valid values. The 2007, 2008, 2009, 2010, 2011, and 2012 plumbing data for Puerto Rico will not be shown. Research indicates that the questions on plumbing facilities that were introduced in 2008 in the stateside American Community Survey and the 2008 Puerto Rico Community Survey may not have been appropriate for Puerto Rico.

Median calculations for base table sourcing VAL, MHC, SMOC, and TAX should exclude zero values.

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Source: U.S. Census Bureau, 2008-2012 American Community Survey

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University of Delaware

Sustainable Coastal Communities Initiative

Cedar Creek

Sustainable Planning Services