2014-12-05

Preliminary Land Use Service (PLUS)
Comprehensive Plan Amendments and Municipal Ordinances

Delaware State Planning Coordination
122 William Penn Street • Dover, DE 19901 • Phone: 302-739-3090 • Fax: 302-739-5661

Name of Municipality: Slaughter Beach	
Address **357 Bay Ave.** **Slaughter Beach, DE 19963**	**Contact Person: Bill McSpadden**
	Phone Number: 424-7659
	Fax Number:
	E-mail Address: **townofslaughterbeach@comcast.net**

Date of Most Recently Certified Comprehensive Plan: Application Type:
Comprehensive Plan Amendment: ___2008_____

Ordinance: _____

Other: _____

Link to the proposed ordinance:

Comprehensive Plan Amendment or Municipal Ordinance prepared by: **Town of Slaughter Beach CLUP Committee**	
Address: **357 Bay Ave** **Slaughter Beach, DE 19963**	**Contact Person: Bill McSpadden**
	Phone Number: 424-7659
	Fax Number:
	E-mail Address:townofslaughterbeach@comcast.net

Maps Prepared by: Davis Bowen and Friedel	
Address: **23 North Walnut Street |** **Milford, DE 19963**	**Contact Person: Joseph Joachimowski Jr**
	Phone Number: 302-424-1441
	Fax Number: 302-424-0430
	E-mail Address: jmj@dbfinc.com

Delaware State Planning Coordination
122 William Penn Street • Dover, DE 19901 • Phone: 302-739-3090 • Fax: 302-739-5661

Please describe the submission: See attached.

Slaughter Beach Comprehensive Land Use Plan Update – 2014

Page vi. Update the Town Official information on page vi as follows:

Bill Krause – Mayor
Amy Parker – Vice Mayor
Jackson Gingrich – Treasurer
Glenn Stieffenhofer – Secretary
Kathy Lock – Councilperson
D. Barrett Edwards IV – Town Solicitor

Page 10. Update "Land Use Planning and Regulation" on page 10 by deleting the first paragraph under section 2.2 in its entirety and replacing it with the following:

The Town of Slaughter Beach primarily consists of residential, commercial, and agricultural/conservation lands. The Town intents to consider future updates to its Zoning Code to encourage limited commercial and light industrial uses correlated with the Town's maritime characteristics and heritage.

Page 11. Update "Demographics, Future Population, and Housing Growth" on page 11 by deleting the final paragraph on the page and replacing it with the following:

2010 Census shows a population of 207 people. Since the last Comprehensive Land Use Plan was approved, a total of 12 houses have been built. Two (2) were existing houses that were demolished and new ones built with the remaining being either full or part time usage. The trend in the Town continues to be a part time community which is used year round.

Page 15. Update "Wastewater Treatment Systems" on page 15 by deleting this section in its entirety and replacing it with the following:

At the time the Town submitted its previous Comprehensive Land Use Plan (CLUP) in December 2007, Eastern Sussex County was undergoing a major building boom. Residents were concerned that a centralized sewer line would encourage the development of surrounding agricultural lands and that higher density would adversely impact the wetlands that protect the Town from flood events. If a "Greenbelt" was created around the Town, then a centralized sewer system would be viewed more favorably by our residents.

Since the time of its adoption/certification, neither the State nor the County has created a "Greenbelt" on either of the two roads leading into the Town. However, two centralized sewage projects were undertaken in Kent County that created the same effect as a greenbelt, and are a model for the Town of Slaughter Beach. The two projects were the Kitts Hummock and Pickering Beach Sewer expansion. (Both communities are located on the Delaware Bay, north of Slaughter Beach.) In both cases, a sewage line was engineered in such a way that it would meet the needs of each community and would not allow for expansion/development of surrounding areas. Kent County Public works, with help from Delaware's Congressional Delegations, secured grants and loans to pay for the expansion.

http://www.coons.senate.gov/newsroom/releases/release/carper-coons-carney-announce-600000-federal-loan-and-grant-for-kent-county-sewer-system-
With these two projects in mind, the Town Council decided that further study of a centralized sewer line would benefit the residents and the Town applied for matching grants from both DNREC's Coastal Programs and the Financial Assistance Branch to determine the feasibility of bringing central sewer to Slaughter Beach. Presently the Engineering firm of Davis, Bowen & Friedel, Inc. is conducting the Feasibility study, with completion expected no later than March 13, 2015.

At this writing, the Town's concerns regarding increased density have not been entirely alleviated, nor have our residents had an opportunity to vote in a referendum for (or against) a centralized sewer line. However, if the results of the feasibility study indicate that a centralized sewer line can be constructed without harm to the wetlands and at an affordable cost to our residents, the Town should work with Sussex and/or Kent County to develop a centralized wastewater management solution.

Pages 31-32. Update "Floodplains" on pages 31-32 by adding the following to the end of the "Floodplains" paragraph:

The Federal Emergency Management Agency (FEMA) is presently updating its flood insurance rate maps (FIRMs) and the new FIRMs are expected to go in to effect on or around March 16, 2015. The Town is working with DNREC, Sussex County and FEMA to update its Floodplain Ordinance in conjunction with the map updates.

Page 32. Insert the new section entitled "Sea Level Rise" after "Floodplains" on page 32 as follows:

Sea Level Rise
Sea level rise could be an emerging challenge for the state of Delaware and for the Town of Slaughter Beach. Sea level rise can be defined as an increase in average tide levels over time and is caused by a combination of subsidence of land and global climate change. The sea level trend as measured by the tide gauge in Lewes operated by the National Oceanic and Atmospheric Administration is 3.39 millimeters/year, which is equivalent to a change of 1.11 feet over 100 years (http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8557380). The existing rate of sea level rise is expected to increase in the coming decades as a result of climate change. The state of Delaware is currently planning for an increase in average tide heights of 1.5 to 4.9 feet by the year 2100.

Increases in average tide levels result in a number of impacts that could be of concern for the Town of Slaughter Beach. Sea level rise can cause permanent inundation of wetlands and uplands, increased likelihood of tidal flooding and infrastructure damage during coastal storms, cause saltwater intrusion into groundwater and decreased depth to water tables.

These impacts could bring changes for the Town of Slaughter Beach. For example, saltwater intrusion into groundwater could compromise the Town's freshwater water supply which is provided by 4 wells located throughout the Town. The Town of Slaughter Beach is also served

by on-site septic systems. Rising water tables could compromise the efficiency of these systems, causing public health and water quality issues. Rising water levels could result in more frequent need for beach replenishment projects and/or dune repairs, and losses of wetlands could decrease the Town's natural defenses against storm flooding.

In recognition that sea level rise could have significant consequences for the state and for coastal towns, the State of Delaware has completed a three year process to assess the state's vulnerability to sea level rise and to develop recommendations that will help state agencies and communities proactively respond to the potential for rising waters. The statewide sea level rise plan outlines several strategies to address sea level rise in a way to best maintain our current way of life for the longest period of time and can be found at the following website: http://www.dnrec.delaware.gov/coastal/Pages/SLR/DelawareSLRAdaptation.aspx

As a component of this initiative, the state is offering technical assistance and funding to municipal governments to plan for the impacts of sea level rise and implement improvements. The Town of Slaughter Beach is concerned about the impacts that sea level rise could have on our community, residents and way of life and will continue to work with the state and other partners to proactively assess flooding issues and implement solutions that will make the town increasingly more resilient to sea level rise and coastal storms.

Page 35. Amend "Future Land Use" on page 35 by deleting the existing section in its entirety and replacing it with the following:

The future land use of the Town of Slaughter Beach should remain a primarily residential community with limited commercial usage as appropriate. Residential areas should primarily consist of single-family homes. Future commercial uses should either directly benefit the residents of the Town of Slaughter Beach and/or be directly correlated with the maritime nature of Slaughter Beach. Certain areas are identified as being appropriate for mixed **Residential/Commercial** uses where a single-family home could be partially utilized for commercial purposes. The Town has designated certain areas for conservation and agricultural activities to encourage the conservation of environmentally sensitive areas and allow for agricultural activities and other activities that are well suited for larger tracts of undeveloped land. The Town has also identified certain areas to be designated as **wharf** areas. In recent years, these wharf areas have been identified for residential uses, but these areas have historically been a working waterfront with charter boats and head boats, dock space leasing, and a variety of other marine related activities. In addition to residential uses, these wharf areas are appropriate for a combination of limited maritime commercial and light industrial uses in keeping with the historic use of this area.

Page 43. Insert a new section "Bayshore Initiative" on page 43 after the section "Milford Neck Wildlife Area" as follows:

E. Bayshore Initiative

The Delaware Bayshore Initiative is a landscape-scale conservation program that focuses on three principal goals: 1) Improving habitat conservation and restoration; 2) Promoting conservation-compatible recreation; and 3) Supporting stronger Bayshore communities. The

Bayshore Initiative region includes an area of nearly 220,000 acres along the Delaware River and Bay from the City of New Castle to the City of Lewes, and west to Routes 13 and 1. More than 50% of the Bayshore area is protected by state or federal agencies, conservation partners, or other land conservation programs. The vision of the Initiative is to leave for future generations a healthy, rural Bayshore landscape that supports a variety of habitats and an abundance of wild plants and animals – even in the face of climate change and sea level rise.

Coordinated by the Delaware Division of Fish and Wildlife, the Bayshore Initiative is focusing on opportunities for voluntary land protection, habitat restoration, recreation enhancements, and tourism promotion while working with Bayshore towns, communities and residents to identify ideas, issues and concerns. The Bayshore Initiative operates under the fundamental consideration of current and future risks of flooding and sea level rise, and ways to increase the resiliency of habitat and communities, and protect recreational opportunities for the benefit of all. The Bayshore Initiative is helping to develop a network of public lands where people today and in the future can visit and have excellent quality outdoor experiences through hunting, fishing, boating, birding, kayaking, hiking or simply enjoying a peaceful scenic view. The Initiative is working with Bayshore communities to foster and spread support for conservation actions that will provide a better quality of life for residents and communities statewide and an improved economy boosted by the addition of jobs and income associated with a healthy environment and outdoor recreation opportunities.

The Delaware Bayshore Initiative has been engaged with the Town of Slaughter Beach from the beginning when the Initiative was launched in Slaughter Beach in 2012. North of town at the mouth of the Mispillion Inlet, the Division of Fish and Wildlife owns and operates the Cedar Creek Public Boat Launch and the DuPont Nature Center. These facilities, amenities and public access areas draw regional (and even international) public visitation to the town. Within town lies the Delaware Nature Society's Marvel Conservation Tract. The Bayshore Initiative is working with the Nature Society and the town to conceive of ways to increase and improve access for education programs that will build upon the town's appeal as a community that embraces nature and Bayshore education efforts. Enhanced access to marsh habitat, for example, offers myriad opportunities for interactive learning for the public and especially for school children. The Initiative is also working with the town to highlight the Slaughter Beach area as one of the premier places to visit to observe the world-renowned spectacle of spawning horseshoe crabs and migrating shorebirds, including the Red Knot. In addition, the Initiative is coordinating with the town to design and install an interpretive sign that highlights migratory shorebirds and other information about the town's habitat and wildlife.

The Town looks forward to continuing its support of the Bayshore Initiative. The Town recognizes the importance's of preserving and protecting the Bayshore region, including Slaughter Beach and the surrounding area. At the same time, through a partnership with DNREC, the Town will continue to support efforts to educate the public about the educational opportunities, recreational opportunities, and the environmental significances of the area including its habitat, wetlands, etc.

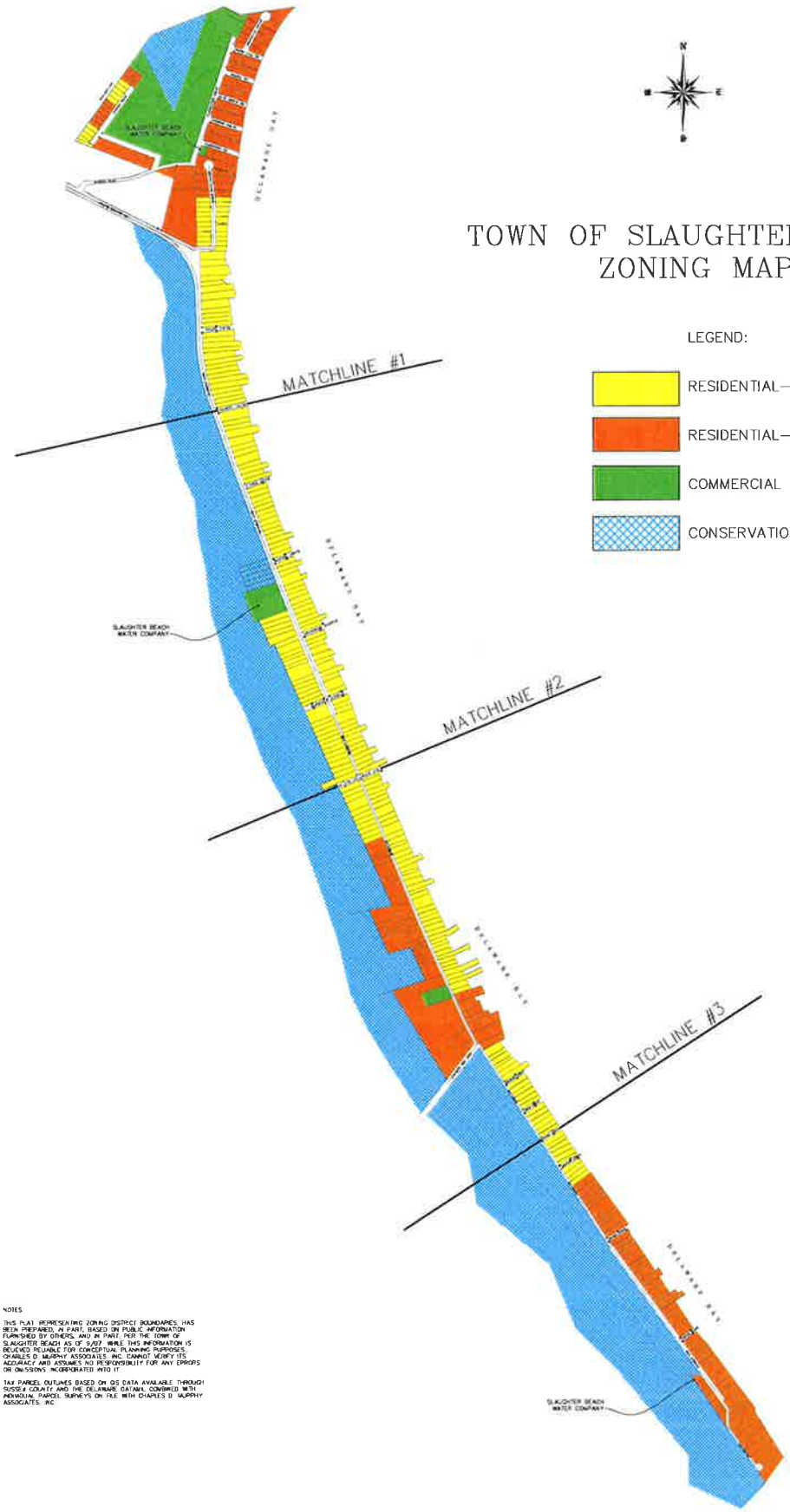
Page 47. Amend the section entitled "Dune/Beach Erosion" on page 47 by adding the following to the end of this section:

In March of 2010, a report was prepared for DNREC's Division of Soil and Water Conservation (now Division of Watershed Stewardship). The report outlines a Management Plan for the Delaware Bay Beaches including Slaughter Beach. The report includes replenishment projects for the various beaches.
http://www.dnrec.delaware.gov/swc/Shoreline/Documents/Management%20Plan%20for%20the%20Delaware%20Bay%20Beaches%20-%20Executive%20Summary.pdf

The Delaware Bay Work Group was formed by DNREC Secretary Collin O'Mara for the purpose of examining issues such as beach erosion, marsh drainage and other related issues in the Delaware Bay Beach communities, resulting in recommendations, both short and long term, for how the State of Delaware and other levels of government might address these problems. The group originated after Sec. O'Mara and DNREC staff met with State Legislators who represent the bay beach areas. All the aforementioned issues have been developing for some time and in certain cases are reaching a crisis level.
http://www.dnrec.delaware.gov/swc/shoreline/pages/delawarebaybeachworkgroup.aspx

Maps 6 & 7. In Maps 6 and 7, the land use classification of Commercial/Agriculture should be changed to Conservation/Agriculture. This was a misprint as Slaughter Beach doesn't have a Commercial/Agriculture classification. Maps 6 and 7 propose two new land use classifications, Residential/Commercial and Wharf, both of which are discussed in more detail in the future land use section.

TOWN OF SLAUGHTER BEACH
ZONING MAP



LEGEND:

- RESIDENTIAL–1
- RESIDENTIAL–2
- COMMERCIAL
- CONSERVATION

NOTES

THIS PLAT REPRESENTING ZONING DISTRICT BOUNDARIES, HAS BEEN PREPARED, IN PART, BASED ON PUBLIC INFORMATION FURNISHED BY OTHERS, AND IN PART, PER THE TOWN OF SLAUGHTER BEACH AS OF 9/07. WHILE THIS INFORMATION IS BELIEVED RELIABLE FOR CONCEPTUAL PLANNING PURPOSES, CHARLES D. MURPHY ASSOCIATES, INC. CANNOT VERIFY ITS ACCURACY AND ASSUMES NO RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS INCORPORATED INTO IT.

TAX PARCEL OUTLINES BASED ON GIS DATA AVAILABLE THROUGH SUSSEX COUNTY AND THE DELAWARE DATAMIL COMBINED WITH INDIVIDUAL PARCEL SURVEYS ON FILE WITH CHARLES D. MURPHY ASSOCIATES, INC.

REVISED: 9/2/08 - NOTES

TOWN OF SLAUGHTER BEACH ZONING MAP	DATE: 18 SEPTEMBER 2007	W.O.: 07-7-186	Charles D. Murphy Associates, Inc. Land Surveyors 14 South Maple Avenue Milford, Delaware 19963 P.L.S. 551
	T.M.: 3-30-5.00-	F.B.: OFFICE	
	TOWN OF SLAUGHTER BEACH	DISK: SLAUGHTER ZONING MAP.dwg	
	SUSSEX COUNTY, DELAWARE	SCALE: N.T.S. DRAWN: MPM	

SHEET 1 of 3

NOTES:

THIS PLAT, REPRESENTING ZONING DISTRICT BOUNDARIES, HAS BEEN PREPARED, IN PART, BASED ON PUBLIC INFORMATION FURNISHED BY OTHERS, AND IN PART, PER THE TOWN OF SLAUGHTER BEACH AS OF 9/07. WHILE THIS INFORMATION IS BELIEVED RELIABLE FOR CONCEPTUAL PLANNING PURPOSES, CHARLES D. MURPHY ASSOCIATES, INC. CANNOT VERIFY ITS ACCURACY AND ASSUMES NO RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS INCORPORATED INTO IT.

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REVISED 4/2/08 - NOTES

SHEET 2 of 3

TOWN OF SLAUGHTER BEACH	
ZONING MAP	
TOWN OF SLAUGHTER BEACH	DATE: 18 SEPTEMBER 2007
SUSSEX COUNTY, DELAWARE	W.O.: 07-7-186
Charles D. Murphy Associates, Inc.	T.M.: 3-30-5.00
Land Surveyors 14 South Maple Avenue Milford, Delaware 19963 (302) 422-7327 F.L.S. 551	F.B.: OFFICE DRAWN BY: MPM
	DISK: SLAUGHTER ZONING MAP.DWG
	SCALE: 1" = 200'

NOTES

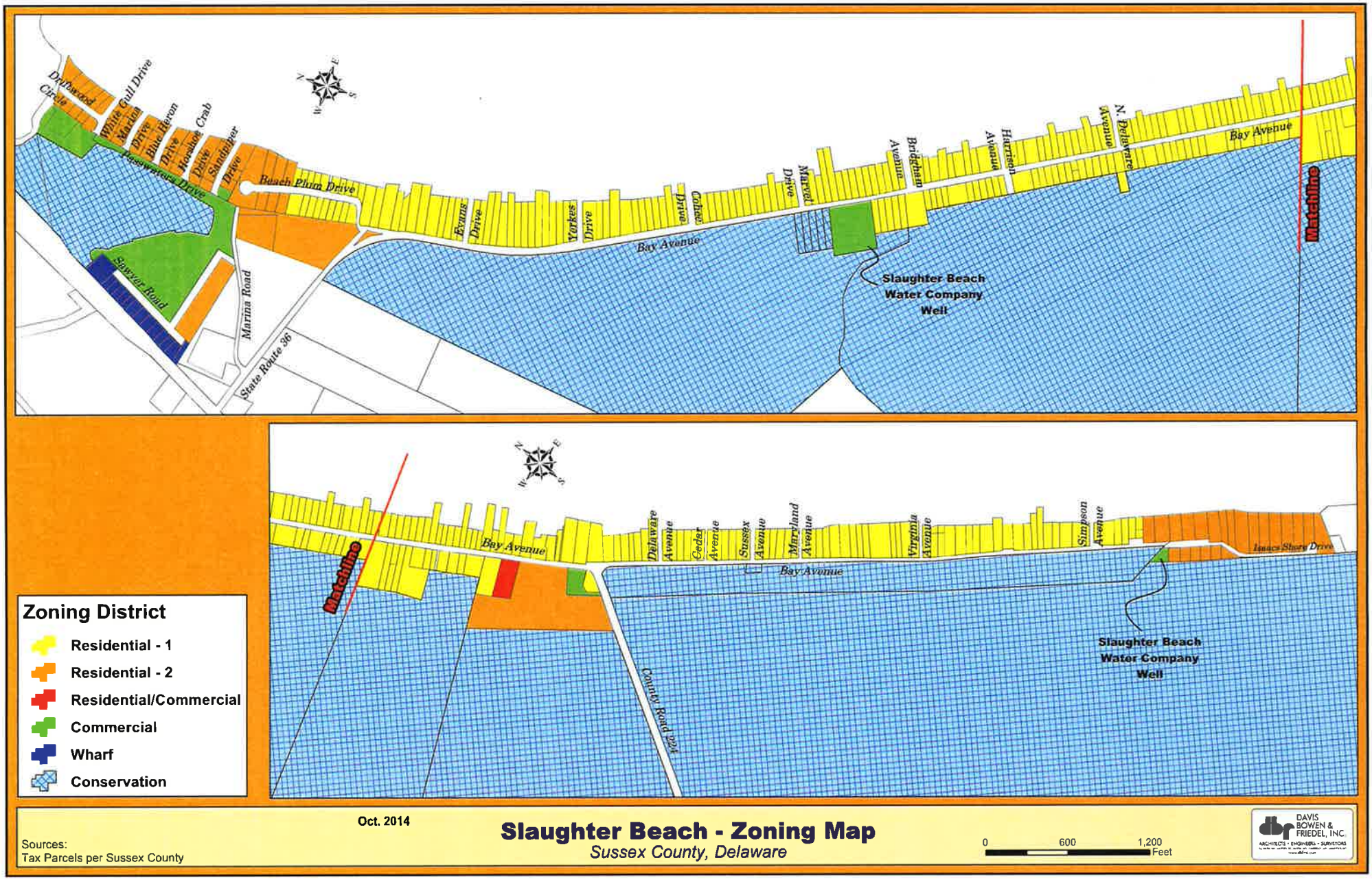
THIS PLAT, REPRESENTING ZONING DISTRICT BOUNDARIES, HAS BEEN PREPARED, IN PART, BASED ON PUBLIC INFORMATION FURNISHED BY OTHERS, AND IN PART, PER THE TOWN OF SLAUGHTER BEACH AS OF 8/07. WHILE THIS INFORMATION IS BELIEVED RELIABLE FOR CONCEPTUAL PLANNING PURPOSES, CHARLES D. MURPHY ASSOCIATES, INC. CANNOT VERIFY ITS ACCURACY AND ASSUMES NO RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS INCORPORATED INTO IT.

TAX PARCEL OUTLINES BASED ON GIS DATA AVAILABLE THROUGH SUSSEX COUNTY AND THE DELAWARE DATAMIL COMBINED WITH INDIVIDUAL PARCEL SURVEYS ON FILE WITH CHARLES D. MURPHY ASSOCIATES, INC.

REVISED 4/3/08 - NOTES

SHEET 3 of 3

TOWN OF SLAUGHTER BEACH	
ZONING MAP	
TOWN OF SLAUGHTER BEACH	DATE: 18 SEPTEMBER 2007
SUSSEX COUNTY, DELAWARE	W.O.: 07-7-186
Charles D. Murphy Associates, Inc.	T.M.: 3-30-5.00
Land Surveyors 14 South Maple Avenue Milford, Delaware 19963 (302) 422-7327 P.L.S. 551	F.B.: OFFICE MITH
	DISK: SLAUGHTER ZONING MAP.dwg
	SCALE: 1" = 200'



Oct. 2014

Slaughter Beach - Zoning Map

Sussex County, Delaware

Sources:
Tax Parcels per Sussex County

0 600 1,200 Feet

DAVIS BOWEN & FRIEDEL, INC.
ARCHITECTS • ENGINEERS • SURVEYORS

TOWN OF

Slaughter Beach

COMPREHENSIVE LAND USE PLAN

DECEMBER 2007

STATE OF DELAWARE
OFFICE OF THE GOVERNOR

RUTH ANN MINNER
GOVERNOR

February 19, 2008

The Honorable Frank Draper
Town of Slaughter Beach
357 Bay Avenue
Slaughter Beach, DE 19963

RE: Certification of Comprehensive Plan

Dear Mayor Draper:

I am pleased to inform The Town of Slaughter Beach that as of January 14, 2008 , per the recommendation of the Office of State Planning Coordination, the comprehensive plan for the Town of Slaughter Beach is hereby certified provided no major changes to the plan are enacted. The certification signifies that the comprehensive plan complies with the requirements of Delaware Code Title 22, Section 702.

I would like to thank the Town for working with the State to incorporate our comments before adoption. We look forward to working with the Town as you move into the implementation stage of your plan.

Once again, congratulations on your certification.

Sincerely,

Ruth Ann Minner

Ruth Ann Minner

TATNALL BUILDING, DOVER, DELAWARE 19901 (302) 744-4101 (302) 739-2775 FAX
CARVEL STATE OFFICE BUILDING, WILMINGTON, DELAWARE, 19801 (302) 577-3210 (302) 577-3118 FAX

Table of Contents

Acknowledgements v

Town, County, and State Officials. vi

CHAPTER 1. BACKGROUND

1.1 The Authority to Plan 1

1.2 Public Participation. 2

1.3 Overview of the Community 2

A. Location 2

B. Community History and Characteristics 2

1.4 Existing Land Use 4

A. Residential. 4

B. Commercial 4

C. Non-Conforming Uses. 5

D. Recreational 5

E. Preserved. 5

F. Adjacent Land Use 6

1.5 Overall Community Vision and Goals 6

A. Findings 7

B. Declaration of Intent 9

CHAPTER 2. MUNICIPAL DEVELOPMENT STRATEGY

2.1 Local Government 10

2.2 Land Use Planning and Regulation Process 10
2.3 Demographics, Future Population, and Housing Growth 11
2.4 Provisions of Utilities, Community Facilities and Services, and Transportation 15
A. Utilities. 15
B. Community Facilities and Services 16
C. Transportation 19
2.5 Community Character, Design, and Redevelopment 20
A. Community Character and Design 20
B. Redevelopment. 20
2.6 Natural Resources, Features, and Habitat 21
A. Shore Birds 21
B. Horseshoe Crab 23
C. Diamondback Terrapins. 28
D. Other Vital Flora and Fauna 30
2.7 Future Land Use, Annexation, and Adjacent Areas 35
A. Future Land Use 35
B. Annexation 35
C. Adjacent Areas 36
2.8 Historic Adjacent Areas, Natural Features and Resources 36
A. Mispillion Lighthouse 35
B. The DuPont Horseshoe Crab Research Center 37
C. Fort Saulsbury 39
D. Conservation Areas 41
2.9 Environmental Concerns 44
A. Oil Spills 44

B. Loss of Habitat 45
C. Dune/Beach Erosion 45
D. Jetty Project 47
E. External Development 48
F. TMDLS 49

CHAPTER 3. IMPLEMENTATION
3.1 Summary of Recommendations and Action Items 50
A. Regional Items 50
B. Local Items 50
3.2 Environmental Issues 51
3.3 Intergovernmental Coordination 51
A. TDR 51
B. Ag Preservation 52
C. Intergovernmental Cooperation 52

APPENDIX A. MAPS
Map 1. Aerial View, Town of Slaughter Beach
Map 2. 2004 Delaware State Strategy Levels
Map 3. Delaware State Strategies – Agriculture Areas
Map 4. DNREC Identified Wetlands and Hydrology
Map 5. Wildlife Conservation Areas
Map 6. Slaughter Beach Existing Land Use
Map 7. Slaughter Beach Future Land Use
Map 8. Q3 FEMA Flood Data – Sussex County Delaware
Map 9. Slaughter Beach Study Area -Areas of Concern

Map 10. DNREC Natural Resource Map
Map 11. DNREC State Resource Map
Map 12. Sussex County Existing Land Use
Map 13. Sussex County Future Land Use
Map 14. Green Infrastructure of Delaware -- Forestland Focus Area
Map 15. Green Infrastructure of Delaware -- Cropland Focus Area
Map 16. Green Infrastructure of Delaware -- Natural Resources and Recreational Land Focus Area

Acknowledgements

This project was funded in part, through a grant from the Delaware Coastal Programs with funding from the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration under award number NAO3NOS4190078.

The Town of Slaughter Beach Comprehensive Land Use Planning Committee would like to thank the following for their help in drafting this Plan:

DNREC, www.dnrec.delaware.gov

Susan Love, Resource Planner Delaware Coastal Programs

Trish Ardent, Delaware Coastal Programs

Dawn Webb, Dupont Nature Center at Mispillion Harbor, www.dupontnaturecenter.com

Volunteers:

Glenn Gauvry, Ecological Research and Development Group (ERDG) www.horseshoecrab.org.

Jim White, Delaware Nature Society, www.delawarenaturesociety.org

Environmental Research Inc. , www.environmentalresearchinc.com
Mary Sitton, Project Manager
Tony Pruitt, Photography & GIS/Mapping
Julia Tracy, Graphic Design

Finally, a very special thanks to Bryan Hall, Circuit Rider Sussex County, Office of State Planning Coordination, for helping to pull this plan together and guiding us through the process.

Town of Slaughter Beach Comprehensive Land Use Plan

Town, County, and State Officials

TOWN OF SLAUGHTER BEACH

Mayor	Frank Draper
Vice Mayor	Steve Masten
Secretary	Tom Barnard
Treasurer	Amelia Anzolut
Councilman	Mark Wells
Planning Commission	Donna Johnson, Chairman
	Amelia Anzolut
	Bill McSpadden
	Howard Sipple
	Robert St. John
Town Solicitor	Rebecca Trifillis

SUSSEX COUNTY REPRESENTATIVES

1st District	Dale Dukes
2nd District	Finley Jones
3rd District	Lynn Rogers
4th District	George Cole
5th District	Vance Phillips
County Administrator	David Baker

STATE OF DELAWARE

Governor	Ruth Ann Minner
Senate	Gary Simpson
House of Representatives	George Carey
Office of State Planning Coordination	Constance Holland

Chapter 1. Background

1.1 The Authority to Plan

Delaware law requires that municipalities engage in comprehensive planning activities for the purpose of encouraging "the most appropriate uses of the physical and fiscal resources of the municipality and the coordination of municipal growth, development, and infrastructure investment actions with those of other municipalities, counties and the state." This plan was written to comply with the requirements of a municipal development strategy as described in the Delaware Code (below) for towns with a population of 2000 or fewer people.

The municipal comprehensive plan for small communities (such as the Town Of Slaughter Beach) with fewer than 2000 people is to be "documented in text and maps, containing at a minimum, a municipal development strategy setting forth the jurisdiction's position on population and housing growth within the jurisdiction, expansion of its boundaries, development of adjacent areas, redevelopment potential, community character, and the general uses of land within the community, and critical community development and infrastructure issues." In addition, the town's comprehensive planning process must demonstrate coordination with other municipalities, the county, and the state during plan preparation. (22 Del. C1953 702; 49 Del. Laws, c.415, 1.)

Further, state law requires that planning be an ongoing process and that Municipalities identify future planning activities. This document is the Comprehensive Plan for the Town of Slaughter Beach as required by state law and is subject to review by the state and its supporting agencies. If any part of this document is found or determined to be in violation of state, county and local law, then that segment shall be considered for informational purposed ONLY and shall not null and void the remaining portions of the comprehensive plan. Finally, this Comprehensive Plan was made possible with the help of a grant from DNREC and the Office of State Planning Coordination.

1.2 Public Participation

The Town of Slaughter Beach established a Comprehensive Land Use Planning committee in November 2002. Meetings started in January 2003 and were held on a monthly basis to solicit comments from committee members and the public. From January 2003 to August 2007, Town Council and the public were apprised of the ongoing planning progress during monthly council meetings. A public hearing to gather comments and suggestions from residents and property owners was held on October 18, 2006. Since may of the residents/property owners make the Town their second home and are here on a limited basis, the CLUP Committee, in addition to a public hearing, members did a canvas on their own of friends/neighbors/property owners to seek input. These "back porch" gatherings helped direct the Committee's formulation of the Comprehensive Land Use Plan. In July 2007, a draft was submitted to the Town Council for review. A public hearing was held in August 2007 to further discuss the comprehensive plan for future certification.

1.3 Overview of the Community

A. LOCATION

The Town of Slaughter Beach is located east of the town of Milford along the coast of the Delaware Bay in Sussex County, Delaware. Slaughter Beach is a small community that has developed over time within the confines of the marshes of the Mispillion River, Cedar Creek, and Slaughter Creek.

B. COMMUNITY HISTORY AND CHARACTERISTICS

Slaughter Beach was founded in 1681 and Incorporated in 1931. How Slaughter Beach got its name has been debated over the years. Early maps show a small creek named Slaughter Creek, which flowed through the marsh from the Cedar Creek south and emptied into the Delaware Bay just north of Prime Hook Beach. To the southwest of the town is an area called "Slaughter Neck". Neck was/is a term used to describe upland areas between two key boundary areas. Another theory is the first postmaster for this locality had the last name of Slaughter.

The naming of Slaughter Beach has two more colorful stories. In the spring and early summer Horseshoe Crabs come on shore to spawn. Wave action flips the crabs over where they would be left to die in the hot sun, thus the "Slaughter of the Crabs." The most colorful story has to be of Indians attacking early settlers in the area. Upon hearing the news, the leader of the settlers arranged a meeting on the beach with the Indian Chief so the settlers' "God" could "speak" to the Indians and make peace. The leader had the Indians gather around their "God", a cannon, and fired the cannon killing all the Indians – thus the "Slaughter of the Indians."

Like the naming of Slaughter Beach, the town has gone through many changes. Slaughter Beach in the early years was primarily a resort for Milford area residents during the summer months. In its heyday, Slaughter Beach had a dance hall, hotels and a boardwalk. With the advance of the automobile and road systems, more and more people started traveling to the Rehoboth area and Slaughter Beach turned into a sleepy little seasonal fishing village. Present day Slaughter Beach has a full-time population of 198 people with a much higher summer population. Slaughter Beach has also become much more of a year round community for "part-time residents" looking to escape for brief periods from the "real world."

Topography

Slaughter Beach, like most of the state of Delaware, falls within the nearly level Atlantic Coastal Plain. The elevation ranges from sea level (zero feet) to approximately 14 feet, with the majority of land lying below five feet in elevation. The terrain to the west of Slaughter Beach, although remaining relatively flat, does reach elevations approaching 30 feet near Route 1.

Soil Conditions

Slaughter Beach has five types of soil within its corporate limits. These soils are coastal beach (sand), tidal marsh, Fallsington loam, Woodstown loam, and Woodstown sandy loam, according to U.S. Dept. of Agriculture Soil Conservation Service 1974 soil survey for Sussex County.

Based on the survey update, five soil mapping units were identified within the municipal Town limits of Slaughter Beach. These soil mapping units are the following: Acquango Beaches complex, Udorthents, Woodstown, Sunken,

and Transquaking- Mispillion complex. The Acquango-Beaches complex soils are excessively well-drained soils associated with coastal sand dunes. Udorthents are soils that have been extensively modified through anthropogenic filling and grading practices with variable site-specific drainage characteristics. Woodstown is moderately well-drained soil associated with low-lying uplands not influenced by tides. Sunken and Transquaking-Mispillion complex are very poorly-drained tidally-influenced soils indicative of tidal wetlands.

Wetlands

Much of the area immediately surrounding the Town of Slaughter Beach contains large acreages of mostly tidally-influenced wetlands with small acreages of nontidal wetlands also mapped. Based on the Statewide Wetland Mapping Project (SWMP) mapping, tidally-influenced estuarine emergent and nontidal palustrine emergent were the major wetland types mapped in or adjacent to the municipal Town limits of Slaughter Beach. Tidally-influenced wetlands are regulated under the State of Delaware's Tidal Wetlands Regulations (Chapter 66), while nontidal wetlands are regulated by the United States Army Corps of Engineers (USACE).

1.4 Existing Land Use

A. RESIDENTIAL

The Town of Slaughter Beach consists almost entirely of single-family residential properties. There are, however, some properties where garages have been improved to contain dwelling space. There are also a few houses that have been converted into two-family dwellings. Much of the current residential housing stock are traditional beach cottages from the 1970s. However, today many of these small cottages with large lots are being converted into larger, more traditional beach style homes.

B. COMMERCIAL

There are only three commercial entities in Slaughter Beach. In the middle of the town is the Slaughter Beach Mini Mart which stocks staple and perishable food items and has an extensive inventory of fishing tackle and supplies. Also, the Cedar Creek Marina and the Delaware Bay Launch Service, both located at the northern end of Slaughter Beach, provide services to the boating community and shipping traffic within the Delaware Bay.

The community at this time has no plans to expand the number of commercial properties. However, the community recognizes the need to allow for future commercial uses that are in character with the existing uses.

C. NON-CONFORMING USES

Through the years, changes in zoning/ordinances have resulted in older cottages becoming non-compliant with town codes that are currently in force. Most of the non-conforming uses are related specifically to new requirements for yard setbacks, lot coverage and detached garages being used as livable space. While a significant number of these older homes are non-compliant, they were grandfathered under the codes that were in existence at the time they were built.

In addition, FEMA regulations must be adhered to for the property owner to be able to obtain flood insurance. In a recent count, there were only three properties in the town that remain non-compliant with FEMA regulations.

The town, through this comprehensive plan, will work to improve and update current zoning codes to address the issue of non-compliance/non-conforming and other issues identified within this plan.

D. RECREATIONAL

The community's focus is the beach itself, which is a public resource and provides a mix of environmental and recreational benefits.

E. PRESERVED

There is a large preserved area called the Marvel Tract, which is on the landward side of Slaughter Beach in the northern part of the town. The Delaware Nature Society manages this property. On the landward side of the southern part of Slaughter Beach is the Prime Hook Wildlife Refuge, a federally managed 10,000-acre preserve stretching for miles. Another preserved area is the Milford Neck Wildlife Area, which is managed by the State of Delaware.

Table 1.1 Existing Land Use in and Surrounding Slaughter Beach, 2006

LAND USE	PARCELS	% TOTAL PARCELS	ACRES	% TOTAL LAND
Ag/NR/Open Space	4	1.0	12,800	98.0
Residential	377	98.0	210	1.6
Commercial	3	0.7	20	0.3
Institutional	1	0.3	1	0.1
TOTAL	38.5	100.0	13,031	100.0

Source: Town of Slaughter Beach Land Use Survey, 2006.

F. ADJACENT LAND USE

In accordance with the most recent Sussex County Comprehensive Plan, much of the land adjacent to the town is zoned AR-1 (Agricultural Residential) and comprises a mix of rural land, minor housing, farming, wetlands, and conservation areas. In addition, much of the land is classified by the State Strategies for Policy and Spending as either Out of Play or Level 4, which are areas in which the state plans to provide no investment to improve critical infrastructure to support new development. Finally, approximately 12,800 acres are in permanent preservation through the State's Open Space and Agricultural Preservation programs, which further enhance the community's environmental and cultural resources. Sussex County Existing Land Use Map, Map 12, shows the area adjacent to the town as rural farmland with low-density housing. Finally the town is concerned with the increasing growth occurring within the largest local jurisdiction, the City of Milford. The Town of Slaughter Beach will develop a Memorandum of Agreement with the City to address their concerns regarding this explosion of new growth.

1.5 Overall Community Vision and Goals

The overall vision and goal for the Town of Slaughter Beach is to remain the same. From its heyday in the early 1930s, Slaughter Beach was the summer resort destination for Milford area residents. Through the years, the town has transformed into what it is today: a small, quaint, quiet town along the

Delaware Bay where residents enjoy a peaceful and relaxing way of life, living in harmony with the natural surroundings. One often feels a sense of calm when crossing over the drawbridge on Cedar Creek Road or the "crabbing" bridge on Slaughter Beach Road. "Part-timers" come to escape the "real world" for the weekend, week, or summer. "Full-timers" know a breeze off the marsh brings flies & mosquitoes—which means a day spent indoors, or the use of plenty of DEET—but a breeze off the bay means a glorious day to be outside. Where horseshoe crabs were once considered a nuisance, the town now has been enrolled as a Horseshoe Crab Sanctuary with the Ecological Research and Development Group (ERDG). Slaughter Beach is a way of life and needs to be protected and preserved along with its habitat. The town's Comprehensive Land Use Plan reflects this vision.

A. FINDINGS

The Town Council of the Town of Slaughter Beach has found and determined that the town exists on a narrow thread of habitable land which is of limited suitability and incapable of supporting dense residential development or large commercial, or industrial uses; and that the town's unique character is, and has always been, a largely seasonal, residential community. Specifically, the Town Council has found and determined that:

The town lies within, and/or is surrounded by, ecologically sensitive areas and bodies of water, including:

- The Delaware Bay, Cedar Creek, and Slaughter Creek
- The Delaware Coastal Zone (7 Del.C. Chapter 70)
- Delaware Wetlands (7 Del.C. Chapter 66)
- Delaware Subaqueous Lands (7 Del.C. Chapter 61)
- Delaware Beaches (7 Del.C. Chapter 68)
- The Coastal Flood Plain (42 U.S.C. 04001 et seg)
- Prime Hook National Wildlife Refuge
- The Marvel Conservation Tract

- The Coastal Barrier Resources System (16 U.S.C. §3501 et seq.)

The town is not suited for dense residential development or large commercial/industrial use because those areas of the town, which are capable of development, are limited by:

- The absence of a central sanitary sewage collection and treatment system
- Soil characteristics and a water table which impose severe limitations upon individual sanitary sewage systems
- The limited capability of the town's existing central water supply system to produce and distribute potable water of adequate pressure throughout the town or to provide water for fire protection purposes
- The limited capability of State Route 36 and County Road 224 to accommodate traffic of large volume or size, further aggravated by the drawbridge on State Route 36 which has a weight limit of 15 tons
- The existence of the town in the 100-year flood plain, which imposes significant restrictions on the type and nature of permissible construction
- The high water table and marshy wetlands, which hampers necessary storm- and surface- water disposal

The overall character of the town, by nature and history, is that of a primarily seasonal, residential community or fishing village in that over 98% of the existing properties in the town consist of single-family residential dwellings with only three commercial uses.

By virtue of being a beach community with substantial water frontage on the Delaware Bay, in close proximity to marina and boat storage facilities on Cedar Creek, and supported by the extensive commercial facilities in the nearby City of Milford, the most appropriate use of the developable land within the town is for single-family residential uses, with limited supporting small commercial and institutional uses.

B. DECLARATION OF INTENT

Based upon the foregoing findings, the Town Council herby declares it to be the intent of this Comprehensive Land Use Plan to preserve the unique character and quality of life in the Town of Slaughter Beach with a view to the conservation of both the ecologically sensitive lands in and adjacent to it and the specific value of the town as a residential community.

Chapter 2. Municipal Development Strategy

2.1 Local Government

By Charter, Slaughter Beach is governed by a five-member Council, including a Mayor, Vice-Mayor, Secretary, and Treasurer who are appointed from among their own number. To run for or serve on Council, an individual must meet the minimum qualifications of being 21 years of age or older and a resident of the town or a property owner for a period of at least six consecutive months prior to election. Council terms are for a two-year period. Town elections are held the first Saturday in July. Two members of the Town Council are elected in odd years, and three members are elected in even years.

Town meetings are held the second Monday of each month at the Memorial Fire Company located in the Town of Slaughter Beach. Slaughter Beach has no Town Hall, but utilizes a space within the Memorial Fire Hall for its Town Office. The Town recently hired a part-time Town Clerk and contracts with a private individual to serve as building inspector. The Town has an agreement with Sussex County to oversee the Federal Emergency Management Agency's Flood Insurance Program.

2.2 Land Use Planning and Regulation Process

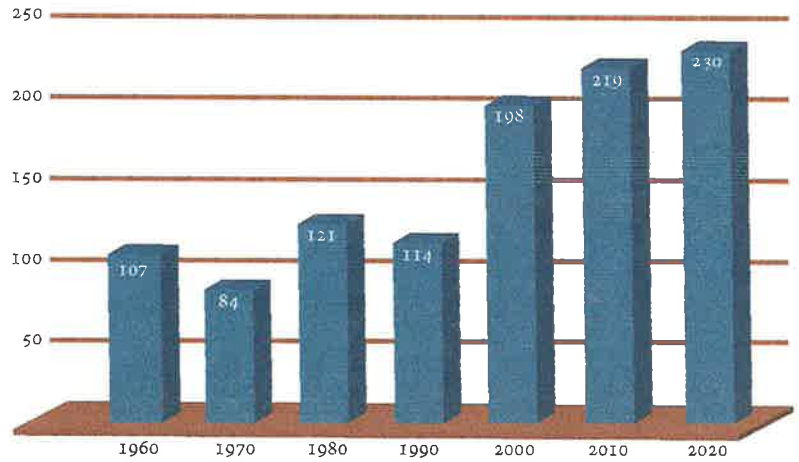
There are three zoning classifications within the town: Residential, Commercial and Agriculture-Conservation. The Residential category is broken down into 2 classifications: R-1, in which lots must have a minimum road frontage of fifty feet, and R-2, in which lots must have a minimum road frontage of 75 feet. Although these current requirements may be limiting to some uses, the town will, through the adoption of this comprehensive plan, work to expand and improve its existing zoning code to allow for future uses that are similar to those currently allowed within the community.

Slaughter Beach has a Board of Adjustment that consists of five residents and property owners. The Board was set up to hear property owners requesting a variance from town codes. In addition to town codes and FEMA building regulations, the town comes under regulations/jurisdiction of the Department of Natural Resources and Environmental Control (DNREC).

2.3 Demographics, Future Population, and Housing Growth

Like any beach area, the population, or more exactly, the occupancy of the residential structures varies greatly with the calendar. Permanent, or full-time, housing is slightly less than 100, and the 2000 U. S. Census records show a town population of 198. Thus, the year-round population occupies these residences at an average of about 2 persons per household. However, there are more than 250 residential structures within the town limits. Many of these "not-occupied year round" structures are occupied during the spring, summer and fall seasons by part-time residents. Some of these part-time residents occupy their cottages for eight or nine months, while others spend some weekends during spring and fall and most of the summer. Other seasonal residents spend all, or part, of the three summer months at the beach. As of late, many of these seasonal homes are being converted into full-time year round residents. Although the Census does not count the seasonal population, the Town estimates that the summer population swells to 400-700 people.

Table 2.1 Community Population Data



**2010 & 2020 are projected populations.*

The permanent, or full-time, population of Slaughter Beach showed no consistent increase or decrease prior to 1980. It decreased somewhat in the 1960s and early 1970s, and increased again in the mid-1970s. The population hovered at around 100 people for most of these years. The population increased during the late 1970s to about 120 by 1980. By the end of the 1980s, the population was still in the 110 to 120 range (114 at the 1990 Census).

The 2000 Census gave Slaughter Beach a full-time population of 198. The population of Slaughter Beach changed radically, according to U. S. Census records.

Table 2.2 Selected Data, 2000 Census

SUBJECT	NUMBER	PERCENT
Total population	198	100.0
DEMOGRAPHICS		
Male	93	47.0
Female	105	53.0
60 to 64 years	31	15.7
65 to 74 years	33	16.7
75 to 84 years	17	8.6
85 years and over	04	2.0
Median age (years)	57.9	(x)
21 years and over	188	94.9
62 years and over	72	36.4
65 years and over	54	27.3
White	197	99.5
Multi-Racial (American Indian or Alaska Native)	1	0.5
HOUSING OCCUPANCY		
Total housing units	253	100.0
Occupied housing units	108	42.7
Vacant housing units	145	57.3
For seasonal, recreational, or occasional use	126	49.8
HOUSING TENURE		
Occupied housing units	108	100.0
Owner-occupied units	93	86.1
Renter-occupied units	15	13.9
Total housing units	253	100.0

Table 2.2 Selected Data, 2000 Census (continued)

SUBJECT	NUMBER	PERCENT
UNITS IN STRUCTURE		
1 unit, detached	236	94.0
1 unit, attached	2	0.8
2 units	9	3.6
Mobile home	4	1.6
YEAR STRUCTURE BUILT		
1999-March 2000	2	0.8
1995-1998	15	6.0
1990-1994	16	6.4
1980-1989	31	12.4
1970-1979	65	25.9
1960-1969	23	9.2
1940-1959	53	21.1
1939 or earlier	46	18.3
VALUE		
Less than $50,000	3	4.0
$50,000 to $99,000	6	8.0
$100,000 to $149,000	24	32.0
$150,000 to $200,000	26	34.7
$200,000 and above	194	76.5

Note: Numbers may not add to 100% due to rounding.

Like most of Delaware, Slaughter Beach experienced a significant growth spurt during the decade 1990-2000. The 1990 Census records show a year-round population of 114. The relatively rapid population increase to 198 year-round residents in the 2000 Census (a 73% increase) is a growth that may be fairly typical of some beach areas in the county. Similar rates of growth within the period of a decade have been observed in many surrounding beach areas where land has been available for building. However, a growth rate mirroring the 1990-2000 increase in the year-round population of Slaughter Beach would be practically impossible to repeat within the current town limits. As explained elsewhere in this plan, land to expand within the Slaughter Beach town limits is almost nonexistent, which could result in only slight increases in population numbers until the community build-out is reached.

Detailed 2000 Census data shows an aging group that has lived in Slaughter Beach for many years. The median age of permanent residents was 57.9 years, and 85 residents (43%) were over 60 years old. Of the total 251 housing units (both permanent and seasonal occupancy), 187 (75%) were built prior to 1970, and 218 (87%) were built prior to 1980. During the decade between 1990 and 2000, when the most significant permanent population growth occurred, only 33 units (13.2%) were built. Among the town's owner-occupied housing units, 33 units (44%) were reported as below $150,000 in value, and another 24 units (for a total of 57, or 79% of total units) were reported as below $200,000 in value. Because of the boom in housing prices in recent years, these reported home values may have been far surpassed as of this writing.

2.4 Provisions of Utilities, Community Facilities and Services, and Transportation

A. UTILITIES

Public Water

Slaughter Beach Water Company is a locally owned provider serving exclusively the Town of Slaughter Beach. The company operates three wells within the community and currently has sufficient capacity to provide services to existing residents. A fourth well is scheduled to be drilled which will help augment capacity to the existing houses on the south end of town and any new homes to be built in that vicinity.

Wastewater Treatment Systems

Presently there is no form of central sewer system for the Town of Slaughter Beach. Individual property owners are responsible for the care and maintenance of on-site septic systems. Sussex County is in the process of a five-year study to determine the feasibility of providing a centralized sewer system to the town of Slaughter Beach. During a meeting with the Office of State Planning Coordination and Sussex County, the town was briefed on the project. The Town's official position is against centralized sewer at the time of this writing. A centralized sewer system would be of great environmental benefit to the town and its ecosystem. However, due to the booming development of housing in the surrounding area, the Town feels that a centralized sewer system for this area could lead to high-density development on adjacent lands. This could have an adverse effect on the town, its infrastructure (or lack thereof), and its residents' way of life, as well as an equally undesirable impact on the town's habitat and ecosystem. The community will develop, through its annual newsletter, a reminder program to encourage the pump-out of residential septic systems. Should a green belt be built around the town, the town would look to the county with much more interest in central sewer.

Solid Waste Disposal and Recycling

The Town of Slaughter Beach has contracted with Allied Waste Management to provide solid waste disposal. The Delaware Solid Waste Administration (DSWA) operates a "Recycle Delaware" center

in the town. It is located in the main parking lot at the Firehouse. In addition, the town is exploring the creation of a yard waste recycling program to limit the disposal of this waste into the surrounding marsh, wetland areas, and landfill.

B. COMMUNITY FACILITIES AND SERVICES

Fire and Emergency Medical Services

The Memorial Volunteer Fire Department provides fire and ambulance service. Their mission is to provide fire protection, prevention services, emergency medical, and emergency disaster protective services to the citizens and visitors of Slaughter Beach and the surrounding area of Sussex County. This is accomplished through the use of emergency preparedness plans, fire prevention codes, public education, fire investigation, and other specialized fire-fighting, medical, and prevention mitigation response.

The Memorial Volunteer Fire Department has operated on an all-volunteer basis for more than 50 years. It has two buildings and marine equipment. The Memorial Volunteer Fire Department has a fleet of six vehicles, including a large tanker, three firefighting vehicles, support trucks, and a tractor. It also has a fire-fighting and rescue vessel to serve the shore environment.

The department was recently designated as a HAZMAT responder, the only one of its kind in the area. In 2004, the Memorial Volunteer Fire Department responded to 100 ambulance calls and 50 fire alarms. Many of the firefighters live and work in the area and are available to answer calls day and night, while others work out of town and focus their firefighting efforts during evenings and weekends. One thing they all have in common is a high level of training.

The department operates almost entirely on donations. They receive outstanding support and help from the county and state in purchasing larger items, such as a tanker truck, but everything else is purchased and maintained by the fire department, thanks to donations from the community. Donations are used for training, to purchase insurance for the firefighters, to build and maintain the two buildings and to purchase new equipment.

Police Protection

Having no budget for a police force, the town relies on Troop 7 of the Delaware State Police located near Lewes, some 20 miles away, to provide police protection to Slaughter Beach. The town does contract with the Delaware State Police to provide speed control within the community during seasonal periods.

Hospitals and Emergency Services

Bay Health and Beebe Medical Center provide emergency services 24 hours a day. Their board-certified emergency physicians and specially trained nurses are prepared to handle the most serious medical crises. Helicopters and ambulances bring trauma cases to the hospitals from throughout the region. Specialists may be called at any time for emergency surgery, to evaluate complicated cases, or to admit patients requiring inpatient care.

Bay Health Milford Memorial Hospital
(302) 430-5721
Milford Memorial's Emergency Department (ED) is designated as a Level IV Trauma Center, meaning it has a 24-hour trauma team and emergency room. Staffed by physicians board-certified in emergency medicine, it serves 20,000 patients per year in its nine beds and two Trauma Rooms. Milford Memorial Hospital has a committed staff of employees, physicians and volunteers who work together every day to deliver their mission objective: to improve the health status of all members of the communities within Milford Memorial Hospital's service area.

Bay Health Kent General Hospital
(302) 674-4700
Kent General's Emergency Department (ED) is located in Dover. It is a Level III Trauma Center with a 24-hour trauma team and emergency room. Kent's ED serves 40,000 patients per year. It has 21 beds, with four fast track beds, a four-bed trauma/resuscitation bay and five other monitored beds.

Beebe Medical Center
(302) 645-3300
Beebe Medical Center's Emergency Department (ED) is located in Lewes, Delaware. It is a Level III Trauma Center with a 24-hour trauma team and emergency room.

Education

The Town of Slaughter Beach is located within the Milford Public School district. The school district consists of: Milford High School, Milford Middle School, Lulu Ross Elementary School and Benjamin Banneker Elementary School.

Recreation

Slaughter Beach is a public beach. There is a park for local residents with a tennis court and children's recreation equipment that is often used by the general public. There is a public pavilion, which can be used from dawn to dusk. There are public rest rooms that are currently maintained by the Town from March through November that are in need of improvement.

Slaughter Beach is widely known as a Horseshoe Crab Sanctuary. People come from around the world to observe, tag, and count the population. This information is given to the U.S. Fish and Wildlife service and the U.S. Geological Survey and is used to develop laws and set limits on the amount of horseshoe crabs that can be harvested for commercial purposes. The beach is used as a place to go kayaking, sailing, and fishing. Surf fishing is popular as the various species of fish migrate past the beach.

Open Spaces

Within the town boundaries lies a wonderful nature preserve called The Marvel Tract, a large natural area with streams and wildlife of many kinds. The Delaware Nature Society administers the Marvel Tract. There is also the Prime Hook Nature Preserve and the State of Delaware Fish and Wildlife Milford Neck Preserve. In total, there are over 12,800 acres of preserves in or adjoining the Town of Slaughter Beach.

Public Accesses and Public Beaches

The public beach can be accessed from a number of public streets that connect the beach to Bay Avenue. The primary access point is next to the firehouse. The large parking lot near the fire hall is owned and maintained by the fire company. Overnight parking is not allowed, but there are no hourly parking restrictions. The beach itself stretches for several miles. There are no lifeguards, and signage states that use of the beach is at one's own risk. Given the nature of the above- and below-water topography, it has been used safely by the limited number of people that currently use it.

C. TRANSPORTATION

Roads

There are two roads that provide access to the town of Slaughter Beach. One is Route 36 (Cedar Beach Road), which connects with the north end of Bay Avenue. The other access route is Slaughter Beach Road, which connects to the midpoint of Bay Avenue near the firehouse. Both of these roads have dirt shoulders or no shoulders at all, with blind curves when crops are planted. The main road is Bay Avenue, a narrow street running from north to south. There is significant pedestrian traffic, as well as bicycles, roller blades, and other modes of traffic. There are a number of unpaved roads that connect Bay Avenue to the beach. Bay Avenue is maintained by the state. The Town provides minor repairs and improvements as necessary to small town roads on a contract basis. The Town has recently assumed responsibility for the roads in the Passwater sub-division. Finally there are several additional roads that are privately maintained.

Pedestrians and Bicycles

Traffic is relatively light, but there is serious concern about people exceeding the posted speed limit in an area where there are small children who live on unfenced properties abutting the road. Slaughter Beach is a very pleasant place to ride a bicycle, yet traffic again is often heavy on weekends during the summer and when fishing is good, further increasing safety concerns on the narrow roads within the community. It is a quiet place and one can observe the birds, foxes, and the flora while getting healthy exercise.

Drawbridge

Route 36 (Cedar Beach Road) crosses a drawbridge as it enters the town. The creek that it passes over is an active commercial waterway. Fishing boats, trawlers, and other vessels request opening of the bridge with a horn signal. Occasionally, maintenance work must be done. At these times the bridge may be open (not usable by highway traffic) for hours or days making emergency access and evacuation difficult to local residents and responders.

Flooding

Bay Avenue is elevated about six inches above some of the bayside properties. This can cause flooding after heavy rains. At times, Bay Avenue itself is flooded, leading to hazardous driving conditions. The two approach roads leading to Slaughter Beach can also flood if there is a combination of high tides and heavy rain. While this does not happen often, one must be prepared to be either "marooned" at the beach or cut off from one's residence for several hours or even days.

2.5 Community Character, Design and Redevelopment

A. COMMUNITY CHARACTER AND DESIGN

Slaughter Beach is a tiny beach town with almost exclusively residential properties. The community character should not change, primarily because of the limited availability of land for development and to maintain its long-standing character as a small residential community and a summer retreat. Many of the houses are small, old beach cottages. The more recently built or renovated houses are larger and crowd the limits of the small-sized lots. With the shopping and support services available in surrounding towns, the community feels there is neither a need nor a desire to expand the town outside the existing boundaries.

B. REDEVELOPMENT

Slaughter Beach does not have traditional development opportunities. The potential for redevelopment within the existing town limits is severely restricted due to the lack of buildable land. There are very few existing lots on which new structures could be built. The opportunity for redevelopment, therefore, is primarily limited to the replacement of existing houses with new structures. If the recent real

estate market trends continue, most, if not all, new structures will be substantially larger residences. The Town has set a series of restrictions to limit the size of new homes through height, size, set-back, and floor area ratio standards and these standards shall be reviewed as part of this planning process.

2.6 Natural Resources, Features, and Habitat

Like other Coastal towns, the Town of Slaughter Beach readies itself for the onslaught of "tourist" season. Unlike other "tourists" in the resort region, they don't cause traffic jams, they don't drive the town economy, and they don't come looking for shopping outlets or a boardwalk. These visitors are from the animal world.

The horseshoe crabs come for spawning areas, diamondback terrapins come for nesting areas, and migratory shore birds stop by to "fatten" up on their way further north. As Fall approaches, once again a new set of tourists flock to our area. This time, it's Canada and Snow Geese and others returning to the marsh, plus a variety of other species that come by to winter over.

A. SHORE BIRDS

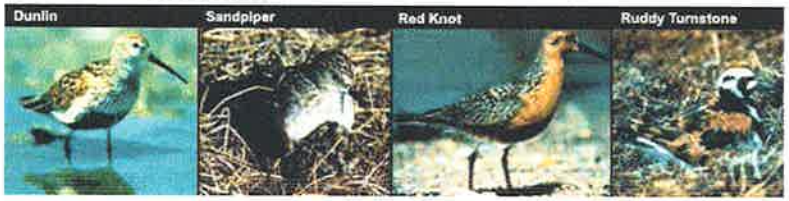
During May and early June, the shores of Delaware Bay resonate with the cheerful chattering of more than 20 species of migratory shorebirds. Delaware Bay provides an ecologically important stepping-stone for the birds' spring pilgrimage to Arctic nesting grounds. The Delaware Bay is the largest spring staging area for shorebirds in eastern North America. A staging site is an area with plentiful food where migrating birds gather to replenish themselves before continuing on their journey. Staging sites serve as a link in a chain connecting wintering areas with breeding grounds, sites for which there are no alternatives.

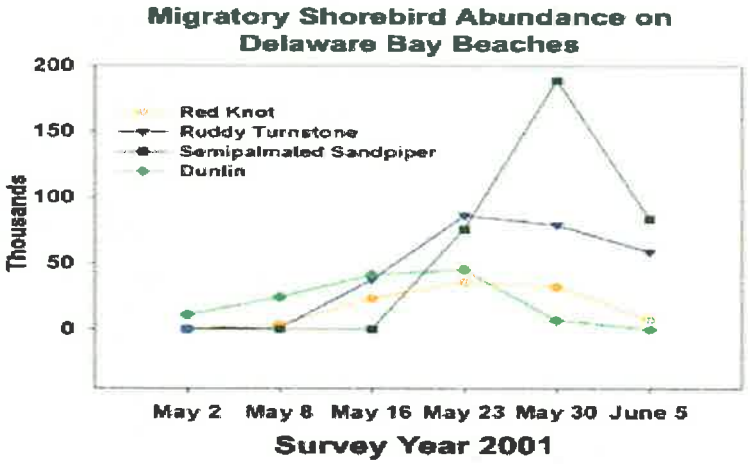
World Travelers

Shorebirds begin to arrive in early May. The numbers of birds soar upward during mid-month and usually peak between May 18 and 24 (in some years as late

as May 28). They have traveled from the coasts of Brazil, Patagonia, and Tierra del Fuego, from desert beaches of Chile and Peru, and from mud flats in Suriname, Venezuela, and the Guyanas. After several days of non-stop flight, and having come as far as 10,000 miles, they reach the bay beaches depleted of their energy reserves. Luckily, nature provides an abundant food supply in this area at just this time of year; the eggs of hundreds of thousands of horseshoe crabs that have migrated to Delaware Bay beaches to spawn.

A Feast for Feathered Friends





The shorebirds spend two to three weeks gorging primarily on fresh horseshoe crab eggs, although worms and small bivalves are also plentiful. High in protein and fat, the eggs are an energy-rich source of food. This high-calorie diet enables the birds to nearly double or triple their body weight before continuing on to Arctic nesting areas.

Each spring, scientists from the Delaware and New Jersey Divisions of Fish and Wildlife conduct weekly aerial surveys of migratory shorebirds on Delaware Bay beaches. In May 2001, scientists observed more than 775,000 shorebirds along beach habitat. Ninety-five percent of these birds were represented by four species: red knots, ruddy turnstones, semipalmated sandpipers, and dunlins. Migratory shorebirds are also known to utilize marshes and back-bay habitats. Thus, throughout their spring migration, the actual number of shorebirds using Delaware Bay as a staging ground may surpass one million. The recent decline in the horseshoe crab population appears to cor-

relate with a decline in migrating shorebird populations.

B. HORSESHOE CRAB

General Information

Horseshoe crabs (Limulidae) are currently represented by four extant species including Limulus polyphemus, which is found along the eastern coast of North and Central America, and three Indo-Pacific species, Tachypleus tridentatus, T. gigas, and Carcinoscorpius rotundicauda. Horseshoe crabs in their present form have persisted for more than 200 million years. All four species are similar in terms of ecology, morphology, and serology. Horseshoe crabs, ranging from the Yucatan peninsula to northern Maine, but are most abundant between Virginia and New Jersey, with the largest population of spawning horseshoe crabs in the world found in the Delaware Bay. While adult horseshoe crabs have been found as far as 35 miles offshore, 74 percent of the horseshoe crabs live in water shallower than 20 meters.

Horseshoe Crab Spawning Habitat

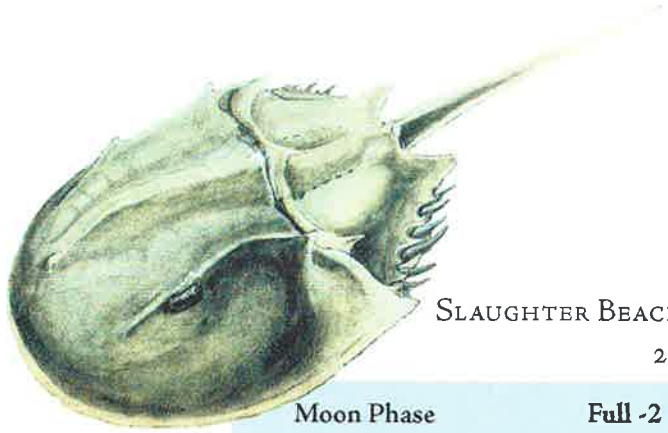
The range of the Atlantic Horseshoe Crab is from Maine to the Yucatan Peninsula. However, the Delaware Bay hosts the densest concentration of spawning activity anywhere in the world. Not only is this significant to the survival of the horseshoe crab, but it is equally important to the other species that have come to depend on the eggs of the horseshoe crab for their survival, most notably the migration of shorebirds. Horseshoe crab spawning season varies according to latitude, but it generally peaks in May and June, with peak spawning occurring on evening high tides during the full and new moons.

The mechanism by which horseshoe crabs locate preferred spawning habitat is not completely understood. While horseshoe crabs spawn in greater numbers and with greater fecundity along sandy beaches, horseshoe crabs can tolerate a wide range of physical and chemical environmental conditions, and they will

Index of Spawning Horseshoe Crabs Abundance -- Delaware

(expressed as the mean number of female crabs per m^2 per night)

BEACH	1999	2000	2001	2002	2003	2004	2005	2006
Bennetts Pier		0.2233	0.6399	0.4713	0.2762	0.5470	0.6992	0.6117
Big Stone	0.7462	0.7290	0.8562	0.6265	0.6370	0.7617	0.8088	1.0896
Broadkill	0.3197	0.0638	0.1170	0.1347	0.2083	0.1741	0.1911	0.1208
Cape Henlopen				0.0857	0.1816	0.1255	0.2694	0.1000
Fowlers	0.7779	0.4933	0.7033	0.2370	0.4532	0.6110	0.2148	0.4077
Kitts Hummock	2.1510	2.5830	2.3545	1.4667	1.5529	1.2394	1.4175	1.7237
Lewes				0.0838				
North Bowers	0.8806	1.1836	1.0383	1.2142	0.9802	0.4995	0.6012	0.7479
Pickering		3.3047	1.6244	1.6950	1.6417	1.6380	1.4708	1.4933
Prime Hook	0.5984	0.1872	0.4446	0.5908	0.4733	0.7596	0.6500	0.7283
Slaughter	1.6190	1.3254	1.0962	0.7265	1.6508	1.5237	0.6805	1.0396
South Bowers		0.9196	0.8433	1.1265	0.4685	0.4796	0.6343	0.7192
Ted Harvey				1.4446	1.9852	1.5220	0.8162	1.4579
Woodland	0.1368	0.1033	0.0292	0.0792	0.0075	0.0012	0.0062	0.2700



Slaughter Beach Horsehoe Crab Densities & Estimates
2006 Survey Results (3 km)

Moon Phase Date	Full -2 11-May	Full 13-May	Full +2 15-May	New-2 23-May	New 25-May	New +2 27-May	TOTALS
Density of HSC (crabs/m)	0.00	5.19	4.66	8.50	13.90	24.24	
Estimated Number of HSC	0	15,570	13,980	25,500	41,700	72.270	

Moon Phase Date	Full -2 9-June	Full 11-June	Full +2 13-June	New-2 23-June	New 25-June	New +2 27-June	
Density of HSC (crabs/m)	1.45	2.16	2.22	0.73	canceled weather	0.34	
Estimated Number of HSC	4,350	6,480	6,660	2,190	canceled weather	1,020	190,170

spawn in less suitable habitats if ideal conditions are not encountered. Therefore, the presence of large numbers of horseshoe crabs on a beach is not necessarily an indicator of habitat suitability.

Essential habitat is defined as those waters and substrates necessary for horseshoe crab spawning, breeding, feeding, and growth to maturity. Horseshoe crabs use different habitats at different life stages. For example, protected beaches provide essential habitat for horseshoe crab spawning efforts, while near shore shallow waters are essential nursery habitat. Spawning adults prefer sandy beach areas within bays and coves that are protected from wave energy with an abundance of food for juveniles. Beach habitat also must include porous, well-oxygenated sediments to provide a suitable environment for egg survival and development.

Beach slope is thought to play an important role in determining the suitability of beaches for horseshoe crab spawning. Horseshoe crabs generally travel down slope after spawning and appear to become disoriented on flat areas. Erosion is also an important component in spawning success. Erosion of the substrate in which eggs are deposited would increase egg and larval mortality. Research has shown beach replenishment can play a significant role in creating improved spawning areas for horseshoe crabs.

Mortality

Human activity probably accounts for the greatest proportion of adult horseshoe crab mortality. Between the 1850s and the 1950s millions of horseshoe crabs were harvested annually for fertilizer and livestock feed. More recently, horseshoe crabs have been taken in substantial numbers to provide bait for other fisheries, including (primarily) the American eel and conch (Busycon carica and B. canaliculatum) fisheries. Horseshoe crabs are also collected by the biomedical industry to support production of Limulus Amebocyte Lysate (LAL), an extract of the horseshoe crab's blood is used by the pharmaceutical and medical device industries to ensure that their products, e.g., intravenous drugs, vaccines, and medical devices, are free of bacterial contamination.

Community-based Conservation Measures

Although Delaware's State and Federal lands are protected horseshoe crab spawning areas, the vast majority of the world's most productive horseshoe crab spawning habitat span the beaches of communities such as Slaughter Beach. Therefore, to insure the continued success of the annual horseshoe crab spawning ritual that occurs along the shores of Slaughter Beach, the community has enacted numerous conservation measures, most notably:

- The declaration that the community of Slaughter Beach is a Horseshoe Crab Sanctuary.
- Community efforts to minimize disruptive human disturbance during peak spawning cycles.
- An active dune grass planting program, that includes designated pathways to prevent and/or mitigate dune destruction.
- Maintaining suitable spawning habitat i.e., define areas in need of beach restoration in partnership with DNREC.
- In partnership with the Army Corp of Engineers and DNREC, work to develop and implement the restoration of the Mispillion Jetty, so as to insure a safe flow of marine traffic as well as mitigate the destructive accumulation of detritus along the south side of the Jetty, which results in the mortality of large numbers of horseshoe crabs annually.
- Participation in the annual USGC administrated horseshoe crab spawning survey.
- Participation in ERDG's **"Just flip 'em!"** program to mitigate horseshoe crab spawning morality due to stranding.
- Maintaining an active education program geared towards informing new residents, as will as visitors, on the importance of this remarkable animal and its importance to the bay's ecology.

C. DIAMONDBACK TERRAPINS

Each spring another natural phenomenon occurs at Slaughter Beach. Diamondback Terrapin hatchlings emerge from the sand, after wintering over, on their long journey to the safety of the marsh. In the summer, a reverse journey occurs when female Diamondbacks emerge from the marsh looking for sandy nesting spots on the beach side of the road.

The Northern Diamond-backed Terrapin (Malaclemys terrapin terrapin) is a highly aquatic turtle that is common along the beaches and salt marshes in the vicinity of Slaughter Beach, Delaware. Its overall range extends from Cape Cod to Cape Hatteras, and in Delaware it is found all along the coast of the Delaware Bay and River south of Delaware City.

This medium-sized turtle is highly variable in coloration. It is usually characterized by concentric markings and prominent grooves on the scutes (large, platelike scales) of the carapace (upper shell), although the grooves may be worn smooth in older individuals. The skin of the head, neck, and limbs is typically light gray with black markings of irregular blotches, wavy lines, spots, or flecks, and the upper and lower "lips" are light yellowish. Adult females are much larger than the adult males, averaging 6 to 9 inches in carapace length compared to just 4 to 5 ½ inches for the males.

The Northern Diamond-backed Terrapin is unusual because it is one of the few kinds of turtles in the world that dwells exclusively in brackish water habitats, such as salt marshes, tidal creeks and rivers, bays, and sounds. Except for the sea turtles, it is the only kind of turtle in the eastern United States to possess a nasal salt gland, used for the excretion of excess salts.

This turtle is almost entirely carnivorous, feeding on a variety of estuarine invertebrates, including fiddler and hermit crabs and also mud snails, periwinkles, mussels, clams, and other small mollusks. It also eats horseshoe crab eggs that are washed off the beach by the tide. Like other turtles, the Northern Diamond-backed Terrapin does not have teeth but instead has a sharp, horny beak used for cutting and crushing.

Northern Diamond-backed Terrapins are active from early spring to late fall. During the colder months of the year, they hibernate either on the bottom under water or buried in the mud of estuaries.

Large groups of Northern Diamond-backed Terrapins can be observed in May and June swimming just off the sandy beaches of the Delaware Bay (including at Slaughter Beach). They are also often seen basking on the mud flats at low tide, sometimes on the backs of the horseshoe crabs that are abundant along bay beaches every spring.

Like all other turtles, the eggs are laid on land. From early June to mid-July, females make their way up onto sandy beaches, artificial dikes, and sand dunes in search of nesting sites, often using the same sites year after year. Favored egg-laying sites along the Delaware coast are often sandy beaches along estuaries that are isolated from uplands by salt marshes. The sides of raised roadbeds through salt marshes are also commonly used. Slaughter Beach offers the Diamond-backed Terrapin an ample supply of suitable nesting sites within the town limits.

After finding a suitable nesting site, the female turtle uses her hind legs to dig a cavity in the sand just beyond the reach of high tide. She then lays between 4 and 18 pinkish white, leathery eggs in the cavity, covering them with sand when finished. The eggs hatch between August and October, although some hatchlings spend the winter in the nest and emerge the following spring. The turtles reach sexual maturity in about 3 to 6 years. Their lifespan is unknown, although it is estimated to be 20 to 40 years.

Terrapin eggs and hatchlings are eaten by both terrestrial and marine predators, including raccoons, foxes, gulls, crows, and ghost crabs. Many nests are raided by raccoons, usually resulting in total destruction of the nest.

From the late 1800s to the 1930s, the Northern Diamond-backed Terrapin was highly sought after as the main ingredient in terrapin stew, a once popular gourmet dish. The demand for fresh turtle meat led to overharvesting, thereby severely reducing populations all along the mid-Atlantic coast. Luckily, this food fad disappeared, and the species made a dramatic comeback. Populations now appear to be stable in Delaware, although recent increases in the demand for terrapins as a food item may again threaten populations. Other threats to this turtle by humans include destruction of nesting habitat, drowning of terrapins inadvertently caught in crab traps, and killing of females and juveniles on roadways. Large numbers of females are killed each year as they move across roads to reach favored nesting sites, especially along barrier beaches.

Red Knot

D. OTHER VITAL FLORA AND FAUNA

The community of Slaughter Beach recognizes the importance of the natural environment of the beach and surrounding areas as habitat for other vital species, such as Diamondback Terrapins, migratory waterfowl, and native plants. The Town wishes to preserve and improve this habitat and protect these species by partnering with a variety of state, county, local and nonprofit entities to achieve a sustainable local ecosystem.

Geology

The Slaughter Beach CLUP (Comprehensive Land Use Plan) study area is situated in the Coastal Plain Province and is comprised of Shoreline Deposits, Marsh and Swamp Deposits, Carolina Bay Deposits, the Scotts Corners Formation, and the Lynch Heights Formation. The land surface topography and morphology of the Slaughter Beach CLUP study area reflect both processes active during deposition of the surficial geologic units and those that have occurred since deposition.

The Columbia Formation covers most of northern and central Delaware and represents deposition following early Pleistocene glaciations in the northeastern Appalachians. Following the deposition of the Columbia Formation, sea level fell with renewed glaciations, and streams such as the Delaware River and its tributaries became deeply incised. During successive rises of sea level, erosion of the Columbia Formation occurred marginal to the valley of the Delaware River and its tributaries. The sediments of the Columbia

Formation were reworked into bays, beach, marsh, and swamp deposits marginal to and within an ancestral Delaware Bay.

The historical shoreline of the Delaware Bay is marked by a change in slope (scarp) between 15 and 30 feet above sea level and four to six miles inland and roughly parallel to the present Delaware Bay. The scarp was produced by erosion of the land along the shoreline of the ancient bay that resulted in a subdued wave-cut feature. An example of a prehistoric shoreline is located along Route 36 from Milford towards Slaughter Beach, in a fairly flat, straight stretch of road that abruptly drops approximately 10 feet in elevation.

The cycle of erosion and deposition related to sea level fluctuations has occurred several times since the deposition of the Columbia Formation. The oldest deposits of this type occurred approximately 250,000 years ago and are preserved in the Lynch Heights Formation. The Scotts Corners Formation represents a more recent time of sedimentation approximately 90,000 to 120,000 years ago. At some point after the deposition of the Scotts Corners Formation, the Carolina Bays were formed and their associated sediments laid down. The most recent deposition began in the Slaughter Beach CLUP study area about 12,000 years ago and is continuing at present with modern swamp, marsh, beach, and bay deposits.

Floodplains

Located on the Delaware Bay, it comes as no surprise that the entire town is located in a flood zone. Bayfront properties are located in a VE zone; which is defined as Zone VE is a flood insurance rate zone that corresponds to areas within the 1-percent annual chance coastal floodplain that have additional hazards associated with storm waves. Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply. The remainder of the town is located in an AE zone; which is defined as Zone AE and A1-A30 are the flood insurance rate zones that correspond to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply. The Federal Emergency Management Agency (FEMA) is the gov-

ernment agency responsible for regulating flood-prone areas. The Town adopted a flood plain ordinance that was approved by FEMA so that property owners could participate in its Flood Insurance Program. In 2004, the Town adopted a new floodplain ordinance that is now administered by Sussex County.

Wetlands

Wetlands in their natural state provide a wealth of value to society. These benefits can be divided into three basic categories: (1) fish and wildlife values, (2) environmental quality values, and (3) socio-economic values.

Fish and Wildlife Values

Both inland and coastal wetlands are essential to maintaining important fish populations. Estuarine wetlands are important producers of shrimp, crabs, oysters and clams for human consumption. Estuarine aquatic beds, in general, also provide important cover for juvenile fishes and other estuarine organisms. According to state fisheries biologists, about 98% of Delaware's commercially important fishes are wetland-dependent. Nearly all freshwater fishes can be considered wetland-dependent because: (1) many species feed in wetlands or upon wetlands-produced food, (2) many fishes use wetlands as nursery grounds and (3) almost all important recreational fishes spawn in the aquatic portions of wetlands. Important freshwater fishes in Delaware include large-mouth bass, white and black crappies, yellow perch, bluegill, pumpkinseed, brown bullhead and chain bluegill.

In addition to providing year-round habitats for resident birds, wetlands are especially important as breeding grounds, overwintering areas and feeding grounds for Atlantic Flyway migratory waterfowl and numerous other birds. Both coastal and inland wetlands serve these valuable functions.

Delaware's wetlands also provide essential habitats for other types of wildlife such as muskrats, beaver, otter, mink, raccoons, skunks, weasels, marsh and swamp rabbits, turtles, and many reptiles and amphibians.

Environmental Quality Values

Wetlands help maintain good water quality and improve degraded waters in several ways: (1) nutrient removal or retention, (2) processing chemical and organic wastes, and (3) reducing the sediment load of water. Wetlands are particularly good water filters because of their location between land and water. Thus, they can both intercept runoff from land before it reaches the water and help filter nutrients, wastes, and sediment from flooding waters. Clean waters are important to people as well as to fish and wildlife.

Socio-Economic Values

The more tangible benefits of wetlands to mankind may be considered socio-economic values. They include: flood and storm damage protection, erosion control, water supply and ground-water recharge, harvest of natural products, livestock grazing and recreation. Because these values provide either dollar savings or financial profit, they are more easily understood and appreciated by most people.

The wetlands information for Slaughter Beach is part of the statewide wetlands mapping effort conducted jointly by the Delaware Department of Natural Resources & Environmental Control and the Delaware Department of Transportation. The wetlands are classified according to the nationally recognized Cowardin et.al., Classification of Wetlands and Deepwater Habitats of the United States.

Slaughter Beach, like most of the state of Delaware, falls within the nearly level Atlantic Coastal Plain. The upland portion of Slaughter Beach consists of a narrow strip of land between Delaware Bay and a large wetland ecosystem to the east. Ocean-driven tides are the dominant hydrologic feature of the wetlands of Slaughter Beach. The majority of wetlands, therefore, are classified as estuarine. The estuarine system consists of tidal brackish waters and contiguous wetlands where the bay water is at least occasionally diluted by freshwater runoff from the land. Emergent vegetation (grasses) is the dominant plant life within the wetlands of Slaughter Beach, with smooth cordgrass (Spartina alterniflora), salt hay grass (Spartina patens), and common reed (Phragmites australis) dominating.

The wetlands to the west of Slaughter Beach continue to be dominated by the tidal influences from Delaware Bay via Cedar Creek and the Mispillion River. The upper reaches of these two tidal streams and their tributaries contain freshwater forested, shrub, and emergent wetlands.

Riparian Wetlands

The Town of Slaughter Beach boundaries contain two riparian areas: Slaughter Creek to the west and Cedar Creek to the north. Conservation areas flank the vast majority of the riparian areas within the town boundaries. Within the town limits, a small portion of the Cedar Creek is not protected by conservation areas and has both existing commercial and residential uses. These areas have "No Wake" zones.

Forested Wetland Areas

Although there are no forested areas within the town limits, the forested areas surrounding Slaughter Beach are very important to our habitat. They provide nesting areas for the Delmarva fox squirrel, eagles, herons, and more. They also provide cover and resting areas for migratory shorebirds and eagles.

Source Water Assessment and Protection Program

The purpose of this program is to protect the quality of public water supplies derived from public water wells. The program provides municipal governments with the knowledge and tools necessary to protect the land area surrounding those wells from activities or substances that might harm the quality or quantity of water derived from those wells. The Source Water Assessment and Protection Program (SWAPP) was created by Congress as part of the Safe Drinking Water Act Amendments of 1996. The goal of the SWAPP is to better protect public drinking water resources by providing local and state governments, and the public more information about those resources. This plan has been developed under the guidance of both the U.S. EPA and the states SWAPP. DNREC Source Water Assessment and Protection Program was developed under the guidance of the EPA and Delaware's Citizen and Technical Advisory Committee (CTAC). The as-

sistance of these two organizations has been vital to the development of a meaningful and workable method for protecting the state's water supplies.

The SWAP Program is one element of the state's overall Water Supply Protection Area (WSPA) Program. The WSPA Program is designed not only to protect Wellhead Protection Areas (WHPAs) but will also address Groundwater Recharge Protection Areas (GRPAs), Surface Water Resource Protection Areas (SWRPAs), and other areas within the state that have exceptional water resource value. The protection of groundwater quality and quantity derived from public water wells ultimately rests with the ability to control land use activities that may prove detrimental to the groundwater resource.

The Water Supply Section, Ground Water Protection Branch (GWPB), has mapped the Wellhead Protection areas within municipal boundaries. There are no excellent ground-water recharge potential areas within the municipal boundary.

Ground Water Recharge

According to DNREC mapping projects, there are no excellent ground-water recharge areas within the municipal boundaries of Slaughter Beach. There are several, however, in the general "study area" in the vicinity of Slaughter Beach that have been outlined on Map # 4.

2.7 Future Land Use, Annexation and Adjacent Areas

A. FUTURE LAND USE

The future land use of the Town of Slaughter Beach should essentially remain the same, primarily as a residential community with limited commercial usage. As of this writing, the town has three commercial properties within the town borders - the Slaughter Beach Mini Mart, Cedar Creek Dry Stack Marina, and the Delaware Bay Launch Services. In the future, only commercial ventures which have a direct benefit to the Town of Slaughter Beach and its residents/property owners should be allowed.

B. ANNEXATION

With limited infrastructure, limited resources, and the desire to keep the present quaint and quiet nature of Slaughter Beach, the Town does not foresee the need to increase its size by annexation in the near future. At present there is no apparent rush by adjacent property owners to be annexed. Therefore, at this time, the Town has not identified any properties or areas that it is considering for annexation. With that being said, the Town's only reason in the foreseeable future to consider annexation would be to control the growth and development of surrounding properties.

C. ADJACENT AREAS

The areas adjacent to Slaughter Beach are primarily farmland, with a scattering of houses or strip developments. There is limited concern about growth within the town borders because the town is close to the built-out stage. The source of concern is the possible development of land and property in the area surrounding the town. With the rapid development of Eastern Sussex County, the possible development of these lands could have a significant adverse effect on the town's habitat, limited infrastructure, and quality of life. Sussex County is in the process of studying the feasibility of providing central sewer to the town of Slaughter Beach. Although this process would take some time to develop, it would be a mixed blessing. With a fragile ecosystem surrounding the town, a central sewer system would eliminate the possibility of failing septic systems and/or the possible flooding of holding tanks. The problem a central sewer system creates is that all the adjacent farmlands on Sussex County Road 224, Slaughter Beach Road, have the potential to be rezoned for high-density housing.

2.8 Historic Adjacent Areas, Natural Features and Resources

A. MISPILLION LIGHTHOUSE

First established in 1831 the construction of the Mispillion Lighthouse was authorized to Winslow Lewis for a sum of $1,500. In 1859 the light was discontinued, taken down and sold to a local resident who moved it and reconstructed the building as a private home in nearby Milford.

Complaints by Mariners led Congress to authorize construction of a new lighthouse on Slaughter Beach, and on June 15, 1873, Mispillion Light was again a beacon to mariners. Two years later, an expansion raised the tower to 65-feet and a Sixth Order Fresnel Lens was installed.

By 1911, the light was automated and a full-time keeper was deemed unnecessary. A local man was paid $60 a year to live in the house rent-free to ward off vandals, but in 1929, the sentinel was deactivated and the watchman was moved out. A skeletal tower, built in 1924, was moved from Cape Henlopen to serve as the Slaughter Beach beacon. Once the house's resident was removed, Mispillion Light began falling into disrepair, and in 1932, the lighthouse was sold at public auction.

The history of the Mispillion Lighthouse is sketchy over the next 50 years, and it received only brief attention in 1984 when the skeletal tower was deactivated. Thus, more than 70 years of neglect and erosion took its toll until a small group of concerned citizens decided to retake Mispillion Light in 2001. This was the beginning of Keepers of the Mispillion Light. Their goal was to raise the money needed to restore the structure under a lease agreement, but less than a year into their plan, lightning cut short their efforts. In May 2002, tragedy struck the endangered old Mispillion Lighthouse with a bolt of lightening. The wood frame structure didn't stand a chance, as fire quickly spread down the walls of the dilapidated building, virtually ending all hope of the once-proud little sentinel being restored to its beautiful "stick-gothic" elegance.

The fire was even more tragic because it came on the eve of a grass roots effort to restore and preserve the sentinel. As broken-hearted lighthouse lovers watched, a private buyer loaded the remaining timbers onto a house-moving truck after discarding the light room in a dumpster. Thus, another beloved piece of lighthouse heritage had passed on.

Saddened by the fire and loss of the sentinel that Lighthouse Digest called "the most endangered lighthouse in America," the damaged building had more visitors in a few days than it had in many years. Mispillion Light was lost just before it could be saved and the beloved lighthouse was moved to the "Lost Lighthouses" list.

Out of the ashes arose a new beginning for the Lighthouse property. In the spring of 2007, The DuPont Nature Center at the Mispillion Harbor Reserve was opened on this property.

B. THE DUPONT HORSESHOE CRAB RESEARCH CENTER

The DuPont Nature Center at the Mispillion Harbor Reserve, owned and operated by the Delaware Division of Fish and Wildlife, is located on a 1.7-acre property at the mouth of the Mispillion River on the Delaware Bay. This harbor represents one of the most important horseshoe crab spawning beaches and shorebird feeding areas in the world. Each year, thousands of horseshoe crabs mate and lay millions of eggs on beaches visible from the DuPont Nature Center's observation deck. The eggs are a critical food source for migratory shorebirds, including the red knot, which stops at the Delaware Bay each spring on its 9,000-mile flight from Tierra del Fuego (South America's southernmost tip) to its summer nesting grounds in the Arctic.

History

The property was purchased by the State of Delaware in 2001 with funding from the PSEG Estuary Enhancement Program. The Delaware Division of Fish and Wildlife began renovations on the building in May 2005. The DuPont Company joined the initiative in December 2005 and provided funding and technical assistance for the educational exhibits and observation decking. The property overlooks approximately 70 acres of marsh and dunes purchased by the Department of Natural Resources and

Environmental Control from the Conservation Fund in July 2006. These adjacent lands are prime horseshoe crab spawning and shorebird feeding areas. Other state holdings to the west include the marshes of the Milford Neck Wildlife area. The Center officially opened on May 23, 2007.

The DuPont Nature Center will serve as a science-based education and interpretive facility for schools, families, and other organized groups. It is designed to connect people with nature and will instill an appreciation for the ecological significance of the region. The center with its distinctive red roof, includes an observation deck with spotting scopes to view the harbor, bay, and shoreline. More than 130 species of birds, fish, shellfish, and other animals populate the area. Inside the center, visitors can view shorebirds and horseshoe crabs along the shoreline more than 100 yards away, courtesy of a remote camera and a 42-inch plasma-viewing screen.

The center is filled with exhibits devoted to the Delaware Bay's natural history and ecology:

- Bird identification panels are designed to help visitors spot many of the species that may be seen in and around the harbor.
- "Fly the Delaware Bay", an interactive exhibit sponsored by the Partnership for the Delaware Estuary, provides an aerial tour of the estuary.
- Beautiful murals illustrate the anatomy of the horseshoe crab, trace the migration of a red knot, and provide information about the biology and ecology of both species illuminating the connection between them.
- Computerized touch-screens take visitors beyond the exhibits with lively closed-captioned video.
- Historical displays recollect early colonial time when shipyards, sawmills, tanneries and flour mills thrived on the Mispillion River.
- Additional exhibits describe research efforts to protect crucial shorebird feeding areas and nesting habitats, horseshoe crab spawning areas, bait use, and the importance of the horseshoe crab in modern medicine.
- An internet access station is available as an additional resource for educational information on wildlife and their habitat.

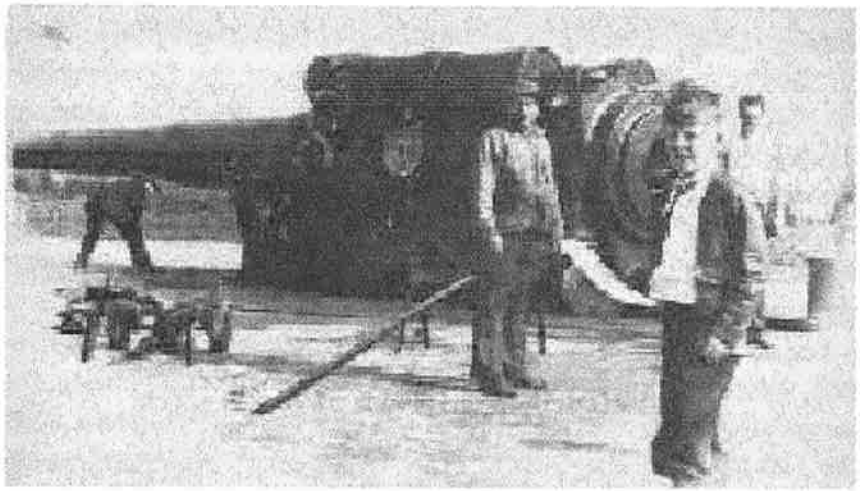
Above: Entrance to bunker (casement).

C. FORT SAULSBURY

Fort Saulsbury is most definitely Delaware's most overlooked or forgotten fort. It stands shrouded in the memories of those still living among the thousands of men who served or were housed there from 1918 through 1945. Fort Saulsbury is located in the very northeast corner of Sussex County, Delaware, six miles east of Milford, adjoining the town of Slaughter Beach. It is the only known fort to be privately owned in the United States. The fort was originally purchased, by the Kendzierski family in 1948, and still remain in private ownership.

In 1917, the U.S. Army approached David W. Shockley and Mark H. Shockley about purchasing their land for use as a fort. The Army decided that this particular location was the best available to insure protection of the mouth of the Delaware Bay and River from any possible enemy threats during World War I.

Since the fort was completed so close to the end of World War I, it was never fully manned. After the armistice in November 1918, the fort was manned by six to eight soldiers, with the ranking soldier being a sergeant. It included four 12-inch guns capable of firing 2,000 pound shells 20 miles and two dirt and grass-covered concrete casements. The casements were constructed of 14-feet-thick, steel-reinforced concrete with six feet of earth on top for camouflage. The fort was named for Delaware's U.S. Senator Willard Saulsbury Sr., who served in the U.S. Senate from 1859 through 1871 and as Delaware's Attorney General from 1850 through 1855.



12-Inch Gun at Fort Saulsbury

When the threat of World War II surfaced, changes were made to the fort. First, two of the four 12-inch guns were moved to the newly constructed Fort Miles in Lewes, Delaware. Eight new wooden buildings were erected at Fort Saulsbury to include one as a barracks for officers and three as barracks for enlisted personnel. Also constructed were an infirmary, recreation building, company storehouse and an administrative building in 1940.

In May 1941, the men of the 261st Coast Artillery Battery B, which was originally organized in Georgetown, Delaware, were assigned to Fort Saulsbury for the purposes of coastal defense. They watched the coast line from three steel towers that were built as part of the 1941 restoration. These towers were located at Big Stone Beach, Mispillion Light and Fowler Beach.

The 261st continued their duty until the completion of Fort Miles at Cape Henlopen in 1942. Two of the 12-inch guns were sent to Fort Miles and the other two were sent to destinations unknown. However, the story of Fort Saulsbury did not end with the dismantling of the guns. The fort's new mission was that of a POW camp for German and Italian soldiers.

On January 11, 1946, Fort Saulsbury was deactivated with the departure of its last POW and sold. Today, Fort Saulsbury remains unused. Experts on American fortifications consider the fort to be the only surviving World War I-era fort which is virtually un-altered and in its primitive state. Many people feel that it is a site which is well worth preserving as a state (or perhaps a national) historic landmark. Emanuel R. Lewis, Librarian of the U.S. House of Representatives, in his book "Seacoast Fortifications of the United States," describes Fort Saulsbury as a classic example of the East Coast fort of the period and worthy of preservation. He wrote, "The only good surviving specimens within the continental limits are two 12-inch gun batteries near Slaughter Beach, Delaware."

Maybe someday this forgotten and overlooked fort will finally get some attention and preservation actions will take place.

D. CONSERVATION AREAS

Very large tracts of land within the town boundaries are permanently preserved as open space. The federal government, the State of Delaware, and the Delaware Nature Society own three large tracts of land. The Town of Slaughter Beach consists of approximately 1000 acres, of which 800 acres are preserved as open space. This includes the lands owned by the above-mentioned three public entities, the Slaughter Beach Fire Company and the Town of Slaughter Beach.

Marvel Tract

Marvel Saltmarsh Preserve --The Marvel Saltmarsh Preserve is an approximately 110 acre tract of saltmarsh in the Town of Slaughter Beach. It is owned and managed by one of Delaware's premier environmental organizations, the Delaware Nature Society. The site was graciously donated to the Society by the Marvel family of Milford, Delaware in 1989. An excellent example of the large expanses of saltmarshes that form much of Delaware's eastern bay shore, the marsh is home to a large diversity of animals including

fiddler crabs, blue crabs, grass shrimp, and many species of mollusks and insects. Nesting Willet, Clapper Rails, Red-wing Blackbirds, Marsh Wrens, and Swamp and Seaside Sparrows can be heard singing and calling from the marsh grasses each spring and summer. In the winter, Northern Harriers and Short-eared Owls can be observed hunting low over the marsh.

The highly productive marsh is a key component in the food chain of the Delaware Bay estuary, providing nutrients in the form of decomposing vegetation, called detritus, for countless estuarine organisms. These minute, decaying grass particles feed small fish, plankton, oysters, shrimp, clams, and crabs that live in the bay. Larger animals, some of which are consumed by humans, in turn eat these smaller organisms. The marsh also serves as an important nursery ground for young fish, shellfish, and crustaceans.

The site is used as an outdoor classroom for students participating in environmental education programs through the Society's Abbotts Mill and Ashland Nature Centers. Programs stress the important role that the marsh plays in the Delaware Bay ecosystem and in the lives of people that live around it.

The Marvel Saltmarsh Preserve's beautiful open landscape adds to the scenic nature of the town of Slaughter Beach and serves as a natural green buffer for the community.

Prime Hook National Wildlife Refuge -- Prime Hook National Wildlife Refuge falls within the Broadkill Hundred and Cedar Creek Hundred of Sussex County, formerly referred to as Hoorenkill or Whorekill County. Translated from the Dutch word Priume Hoek meaning Plum Point, Prime Hook was named by European settlers in the 17th century for the land's abundance of purple beach plums. Many farms and residences were once present on what is now the refuge.

In 1963, Prime Hook National Wildlife Refuge was established under the authority of the Migratory Bird Conservation Act for use as an "inviolate sanctuary, or any other management purpose, expressly for migratory birds". The refuge began as a satellite of its sister refuge to the north, Bombay Hook. With a small and dedicated staff, the refuge began management of the land especially for wildlife. In 1986, the endangered Delmarva Fox Squirrel was reintroduced to the refuge. With the help of volunteers and community support, a Refuge Headquarters building was completed in 1997. That year also marked the creation of the Friends of Prime Hook, who have been assisting the refuge in its endeavors ever since. In 2000, Prime Hook became an independent refuge. The refuge has expanded to 10,000 acres with one of the largest freshwater impoundments on the East Coast.

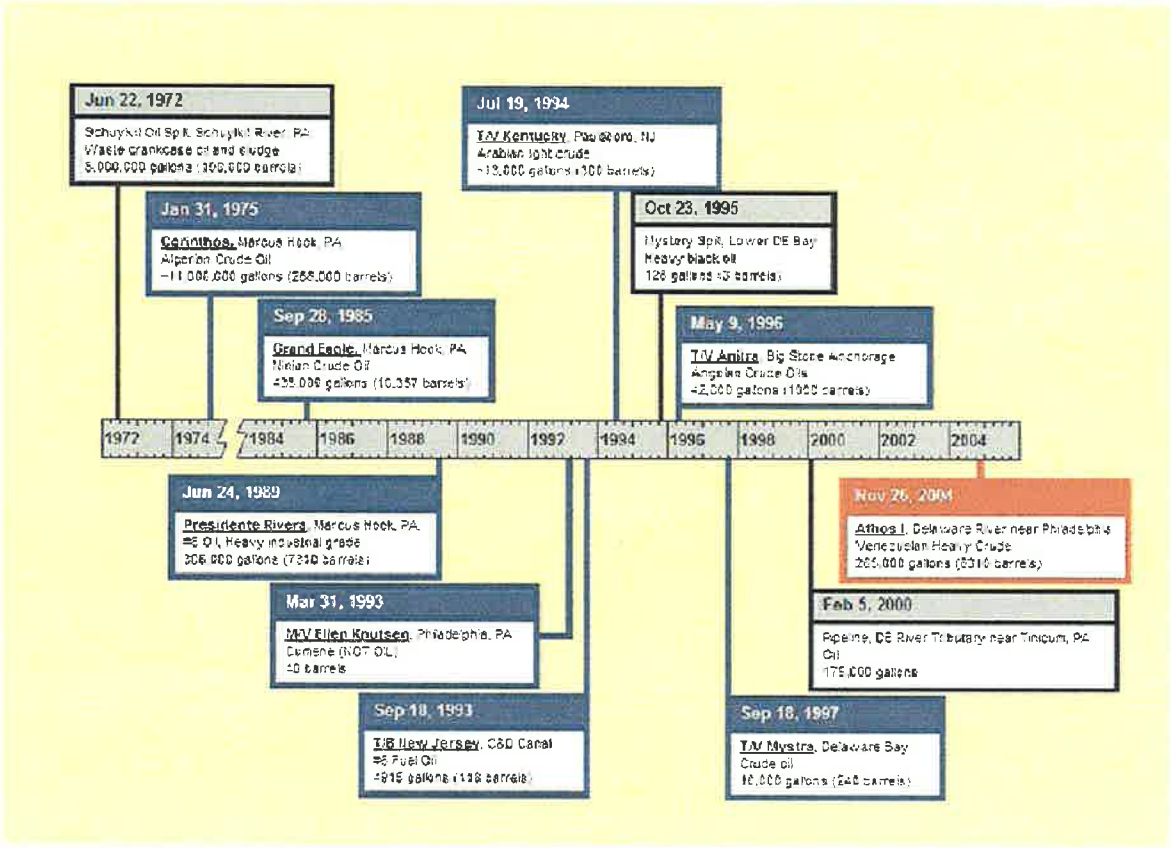
The refuge is located in a key position in the Atlantic flyway and each year, hosts hundreds of thousands of migratory birds. Today, the Refuge's primary objectives continue to focus on providing habitat and protection for waterfowl, waterbirds and other migratory birds, and endangered species and to insure the availability of these resources to the American people for their enjoyment now and in the future.

Milford Neck Wildlife Area --Milford Neck Wildlife Area is a mix of parcels located in both Kent and Sussex Counties. The community of Slaughter Beach is most impacted by two specific parcel complexes of the Wildlife Area: the Cedar Creek Tract and the Rawley Island Tract. The Cedar Creek area is comprised of 6 tracts totaling 664 acres south and west of the community within Sussex County. The Rawley Island Tract is located to the north of the community in Kent County and is 561 acres. Both tracks provide a mix of habitat management programs to support wildlife while providing a variety of recreational opportunities to the community.

2.9 Environmental Concerns

A. OIL SPILLS*

Approximately 3000 vessels travel the Delaware Estuary each year. Among them, 30% carry some form of crude oil. The anchorage for the oil tankers is located directly off the shores of the Town of Slaughter Beach, with lightering operations just north of the town. Although oil spills have been few, they can occur at any time and have a devastating effect on the environment, habitat and ecosystems. The last major oil spill occurred on November 26, 2004, when the Athos I struck a submerged object near Paulsboro, New Jersey, releasing 260,000 gallons of oil. If an oil spill of this magnitude had occurred in late May or early June at the anchorage, the effects could have been devastating to shorebirds, horseshoe crabs, and other aquatic life and to the marsh and wetlands surrounding Slaughter Beach.



Information regarding oil spills within the area of Slaughter Beach was compiled by James Corbett, Assistant Professor Marine Policy, College of Marine Studies, from NOAA and USCG incident summaries of spills from the Delaware Bay and River Estuary.

In late April of 2006, the unthinkable almost happened, an oil spill occurred just prior to the shorebird migration and horseshoe crab spawning. Luckily the response team arrived and the beach was cleaned prior to the migration/spawning season. To this day, from time to time oil/tar balls can be found on the beach.

B. LOSS OF HABITAT

Years ago in the spring, the shores of Slaughter Beach were thick with horseshoe crabs and shorebirds. Where you once could not walk to the water, large stretches of beach now remain open. Instead of a beachwide spawning area, the majority of spawning now occurs on the north end of the town and in the Mispillion harbor. After years of heavy declines in the horseshoe crab population begun in 1999, research indicates that the population is starting to stabilize thanks to conservation measures, but it is not increasing. Where the entire shoreline was once filled with migratory shorebirds, stretches of the beach are now left empty, with the exception of a few shorebirds and seagulls. Research shows that there is a direct correlation between the population of horseshoe crabs and shorebirds. Shorebirds rely on horseshoe crab eggs as their primary food source, so the majority of them congregate in the few high-spawning areas for horseshoe crabs, leaving the bird flocks more exposed to natural predators. Unfortunately, unlike the trend of the horseshoe crab, the red knot (shorebird) population seems to be in a steady decline.

C. DUNE/BEACH EROSION

What Mother Nature made, she also takes away. What Mother Nature takes away, man tries to put back. Dune/beach erosion is a continuous problem. Like other coastal towns, rising tides and dune erosion pose a major threat to property owners. As the beach continues to erode, structures become increasingly vulnerable to the threat of hurricanes, Nor'easters, and even small coastal storms. In 1970 DNREC was granted easements from Slaughter Beach property owners to take primary responsibility for the control, maintenance and preservation of the beach and dune areas. DNREC has Regulations Governing Beach Protection and the Use of Beaches which require property owenrs to obtain approval prior to any construction activities on their lots. DENREC has established a building line, and construction to the east of that line is prohibited without a permit from the Department. They also sponsor the spring beach grass planting. Cape American beach grass helps stabilize the dunes and also helps to trap wind-blown sand and

increase the size of the dunes. The Town of Slaughter Beach, with the help of volunteers, participates in this program on an as needed basis. Another means of beach/dune protection is through beach nourishment or replenishment. This process is done by pumping sand from a selected offshore site back onto the beach to extend or enhance the dunes and beach.

Since records have been kept, Slaughter Beach has undergone the following replenishment/nourishment projects:

- 1940 -1957 – approximately 20 timber (and one timber and stone) groins installed
- 1958 – beach fill via truck haul (49,000 cubic yards)
- 1961 – beach fill via hydraulic dredge (165,000 c.y.)
- 1962 – beach fill via truck and heavy equipment (56,600 c.y.)
- 1975 – beach fill via hydraulic dredge (179,500 c.y.)
- 1976 – beach fill via hydraulic dredge (277,700 c.y.)
- 1979 – beach fill via hydraulic dredge (20,000 c.y.)
- 1985 – beach fill via hydraulic dredge (10,300 c.y.)
- 2005 – beach fill via hydraulic dredge (114,970 c.y.)

Dune/beach erosion not only has an effect on property owners but can also have an adverse effect on local habitat. Erosion of the dunes and beach can create loss of spawning, nesting, and feeding areas for horseshoe crabs, migratory birds, and diamondback terrapins. Lose of dunes can also allow "wash over" of sea water from the bay into the marsh areas during coastal storms. This can have an adverse affect on the delicate ecosystem in the marsh/wetlands.

Another erosion problem Slaughter Beach is encountering is the erosion and deterioration of the Mispillion Harbor Jetty. The Jetty was built in the early 1970s, and the U.S. Army Corps of Engineers is responsible for its maintenance and repair. Over the years, the west wall of the jetty has started to erode and fall into a state of disrepair. The break in the jetty may be leading to the "silting in" of the north end of Slaugh-

ter Beach. Detritus is building up on the north end, which leads to reduced spawning areas for horseshoe crabs, feeding areas for migratory shorebirds and nesting areas for diamondback terrapins.

D. JETTY PROJECT

In spring of 2006, at the request of the Town of Slaughter Beach, the Delaware Coastal Programs (DCP) within the Department of Natural Resources and Environmental Control (DNREC) agreed to fund and oversee a study of the inlet jetty and Mispillion harbor area. Town officials were concerned about navigational hazards posed by shoaling and submerged pilings and by loss of valuable shorebird and horseshoe crab habitat. The DCP agreed with those concerns and began seeking solutions.

In July 2006, a contract was signed with the consulting firm Moffatt & Nichol to gather existing environmental data and create a series of computer models depicting water and sediment flow. This work is necessary to fully understand the natural processes at work before devising potential solutions; otherwise, we run the risk of unexpected outcomes that may do more harm than good. With highly sophisticated models, we can essentially "play out" jetty improvement scenarios to see what will be effective and what will not prior to beginning expensive construction. Three models, a wave model, a hydrodynamic model and a sediment transport model, have been developed. These models will imitate water and sediment flow within the harbor area and incorporate influences from the Delaware Bay, thereby providing a comprehensive picture of processes within the harbor.

In order to collect more accurate information about the effect of waves on the Slaughter Beach area, DCP deployed a wave buoy approximately 4 miles offshore. The DCP also installed a tide gauge and conducted current studies within the harbor to more accurately predict water flow. Information from these data sources will be incorporated into the models.

A draft final report from the consultant is expected in late August 2007 including conceptual designs of recommended alternatives and estimates of expected costs. The DCP will present options to the Town of Slaughter Beach and involve the Town in the decision making process. The DCP will also garner input

from state and federal resource agencies and various stakeholders to assist in selecting the best alternative to enhance wildlife habitat and preserve the unique resources of the area.

E. EXTERNAL DEVELOPMENT

With the exception of coastal storms, the biggest threat to Slaughter Beach comes from external development. Lands within a five-mile radius of the town are primarily wetlands and farmland. Skyrocketing prices for farmland (purchased for development) is leaving area farmers in a dilemma: work long hard hours with uncertainty about future market conditions, or sell out to developers. Although large sections of lands within the study area are in Level 4 (under "State Strategies") where development is discouraged, one needs to only look along the Route 1 corridor to see development approaching north from the Rehoboth/Lewes area and west of Route 1. To date, through the Office of State Planning Coordination's PLUS System, 513 applications have been passed through or are pending the review process, with approximately 30% of those in Level 4 areas in Sussex County. Among those, 40 are east of Rt. 1, and 11 are within five miles of the town. Within 10 miles west of the town, 51 have been submitted for review and 51 have been approved for development, with a total housing potential of 6,000 units, including single-family homes, condos, and townhouses.

The Town of Slaughter Beach has very limited infrastructure. Public access roads are unpaved, the public bathroom, which is provided on a seasonal basis, is outdated, and police protection, provided by State Police Barracks #7 located in Lewes is 20 miles away. Large-scale developments within close proximity of the town would lead to additional traffic and demand on these limited facilities.

It is duly noted that Slaughter Beach is a public beach and at present is capable of handling the small volume of visitors who come to our shores for bird watching, walking, shell/rock collecting, surf fishing, and/or to enjoy a quiet, relaxing day at the beach away from the crowds. What it can't handle is a large influx of people coming to the beach or passing through the town. A large influx of people would have a significant, adverse effect on the town, its roads, its residents' quaint and peaceful lives, and its infrastructure. It would also have an adverse effect on the town's habitat. Additional traffic in and through the town would cause

more mortality of the Diamondback Terrapins that cross the streets from the marsh seeking nesting areas along the beach. It would also put the hatchlings even further at risk as they cross from the beach over to the marsh. Additional foot traffic along the beach could lead to disruption of feeding migratory shorebirds and destruction of dune grass.

F. TMDLS

Under Section 303(d) of the 1972 Federal Clean Water Act (CWA), states are required to identify all impaired waters and establish total maximum daily loads to restore their beneficial uses. A TMDL defines the amount of non point and point source pollutants a water body can absorb on a daily basis without violating State water quality standards. A Pollution Control Strategy (PCS) will provide the regulatory framework for achieving the TMDL reductions necessary for meeting the State water quality standards. The Town of Slaughter Beach is located within the Cedar Creek and Mispillion watersheds. The TMDL nutrient reduction for the Cedar Creek watershed requires a 45% reduction in total nitrogen and total phosphorus form baseline conditions. The Cedar Creek watershed TMDL also requires a 96% reduction in bacteria from baseline conditions. The TMDL nutrient reduction for the Mispillion watershed requires a 57% reduction in total nitrogen and total phosphorus from baseline conditions. The Mispillion watershed also requires an 87% reduction of bacteria from baseline conditions. The Cedar Creek and Mispillion Total Maximum Daily Load's (TMDLs) were approved in December 2006. DNREC recommends best management practices (BMPs) for all land uses.

Chapter 3: Implementation

3.1 Summary of Recommendations and Action Items

A. REGIONAL ITEMS

Partner with the Department of Agriculture, Sussex County and the City of Milford to address future expansion of Milford east of State Route One.

Partner with the Department of Agriculture, Sussex County and the City of Milford to identify those lands west of Slaughter Beach as a Transfer of Development Rights Sending Area to further expand the Protected Green Belt of Conservation Areas within and surrounding the community.

Partner with DNREC to evaluate the long term impacts of the bay to community and coastal resources.

Partner with DNREC to continue to implement environmental programs to expand and protect important flora and fauna.

B. LOCAL ITEMS

Review and amend local zoning codes to address residential concerns regarding a variety of land use activities such as future annexation, building standards, etc.

Partner with Department of Transportation to implement local road standards and develop a short- and long-term maintenance program for these resources.

Continue to improve the local recreational resources. This includes, but is not limited to: continued beach replenishment, repair and improvement to rest room facilities, etc.

3.2 Environmental Issues

The community recognizes the many natural resource issues within and surrounding the community. The town hopes to continue and expand upon its existing partnerships with the state, county and local jurisdictions to expand its environmental management programs and policies. Some key issues to the community are:

Habitat protection and restoration
Flooding
Recreational Activities
Storm Water and Drainage Concerns
Clean Marinas
Clear / Stable Channels
Mosquito Control

3.3 Intergovernmental Coordination

A. TDR

Transfer of Development Rights, TDR, is a program that provides a mechanism for governments to concentrate residential and other development in desired areas (such as those already served by sewer, water, roads, and other public facilities) while protecting rural landscapes and environmentally sensitive areas. Under a TDR program, the development rights vested in a zoned property (the "sending area") can be sold to a TDR bank or to a specific developer. Those rights are transferred to another location (the "receiving area"), where they can be applied to increase the density of a development above the maximum specified by that property's zoning district.

If Sussex County adopts a TDR program or participates in a statewide TDR program in the future, the Town of Slaughter Beach strongly intends for the town and its surrounding area to become a sending area for the TDR program, with the result of directing development elsewhere while protecting the town's character and natural habitat. This is consistent with the preceding finding that the town is incapable of

supporting dense residential development and supports the town's goal of preserving its unique character and environmental attributes.

B. AG PRESERVATION

The Town supports the continuation of agricultural land uses in the area surrounding the town where farming has been practiced for centuries. Farming preserves open space for the benefit of residents and visitors and provides a buffer between the town and encroaching development. Keeping this land in farming restricts the amount of impervious surface cover in the watershed and provides habitat for a variety of species. Agricultural preservation programs should continue to be used to preserve the farmland adjacent to and surrounding the Town of Slaughter Beach. The Town encourages the farming community to practice conservation measures, such as the use of adequate stream buffers to protect riparian zones and absorb runoff and pollutants; no-till and contour plowing to reduce soil erosion and runoff; and organic and sustainable farming practices that reduce the impact that farming has on the critical environmental resources in the Slaughter Beach area.

C. INTERGOVERNMENTAL COOPERATION

The Town of Slaughter Beach wishes to work in partnership with Sussex County and the City of Milford to better address land use issues in this rapidly developing area. The City of Milford (and its immediately adjacent areas) is the best place for high-density development because it is an historic population center that is already served by public services, amenities and institutions. Slaughter Beach strongly discourages the current trend of aggressive, high-density development featuring very large homes that is occurring in a piecemeal fashion in the unincorporated areas in our region, particularly those that are classified as Levels 3, 4, and "Out of Play" by the State Strategies for Investment. This growth is largely uncoordinated, occurs outside of those areas serviced by public amenities, and threatens the historic, cultural, and environmental landscapes of our area. Simply put, we do not

believe that this kind of growth is desirable or sustainable. The Town of Slaughter Beach opposes any rezoning of land within the area of concern to higher densities. Instead, where development does occur outside of targeted growth zones, we support single-home construction on large lots that maintains more of the natural landscape, does not require extension or development of significant public infrastructure, and places less stress on environmental resources.

B. EVALUATION OF RELEVANT PLANNING DOCUMENTS

The Town of Slaughter Beach when considering the future growth and development of the community consider several local, county and state planning documents to direct its future. These documents include and are not limited to the following:

Delaware State Strategies for Policy and Spending - Upon review of this document the Town determined that only lands within the town boundary were defined as Level 1 and Level 2 or areas suitable for develop and eligible for state investment. All other lands surrounding the community are defined as Level 4 or areas that are better suited for conservation and or preservation activities. Because of this classification, the Town chose to recommend and support activities such as Transfer of Development Rights to promote and preserve the rural character surrounding the community.

Various DNREC Resource Reports – The Town of Slaughter Beach reviewed and utilize many DRNEC reports on studies on wildlife, habitat, green infrastructure and state resource areas to develop much of this document to allow for further preservation and conservation of many natural resources within and surrounding the community.

Del-Dot's Sussex County Transportation Plan – The community reviewed this document to determine the future road improvements planned for the area within and around Slaughter Beach.

The Sussex County Comprehensive Land Use Plan – The County's Comprehensive Land Use Plan provided valuable insight and direction for the community as it considered the future for Slaughter Beach. Upon evaluation of the County's Comprehensive Plan, it was determined that all of the land surrounding the town is zoned AR-1 and subject to two building units to the acre. In addition, the County has performed a regional sewer

study for this area and has recently been performed for the area around the Town. Also, an amendment was recently passed allowing for up to six units to the acre under the County's current cluster ordinance. Based upon these concerns and others, it is the opinion of the Town that the area around Slaughter Beach is ripe for sprawl development by the county given its location to the beach. As such, the Town has determined to preserve its character and way of life as stated, and that the areas surrounding the community should be preserved through a variety of County and State Programs.

City of Milford Comprehensive Land Use Plan – The town has an abundant knowledge regarding the City's Comp Plan and its ongoing annexation of lands east of Route 1. The Town has formally opposed Milford's plan to annex lands east of Rt. 1. More specifically the Town strongly opposes annexations where density is proposed higher than that which is currently allowed. The Town of Slaughter Beach wishes to partner and participate with Milford as it considers its future growth and development. It is the Town's hope that lands to the east of State Rt. 1 would be preserved through either agriculture easements or TDR's.

Town of Slaughter Beach, Sussex County Delaware

Digital Orthophotography provided by State of Delaware of Color Infared 2002 aerial imagery.
Projection: NAD_1983_StatePlane_Delaware_FIPS_0700
Geo-coordinate-system: GCS_North_American_1983
Delaware DOT Roads: Delaware DOT Roads.shp
Slaughter Beach Boundaries: Slaughter_Beach_Boundaries.shp

Map 1 - Aerial view Slaughter Beach municipality boundary over the State of Delaware 2002 color infared aerial imagery. The town of Slaughter Beach has a total of 893 Acres.

Legend

- Slaughter_Beach_Boundary
- Delaware DOT Roads

Aerial View Slaughter Beach Municipality

Map 1

0 500 1,000 2,000 3,000 4,000 5,000 Feet

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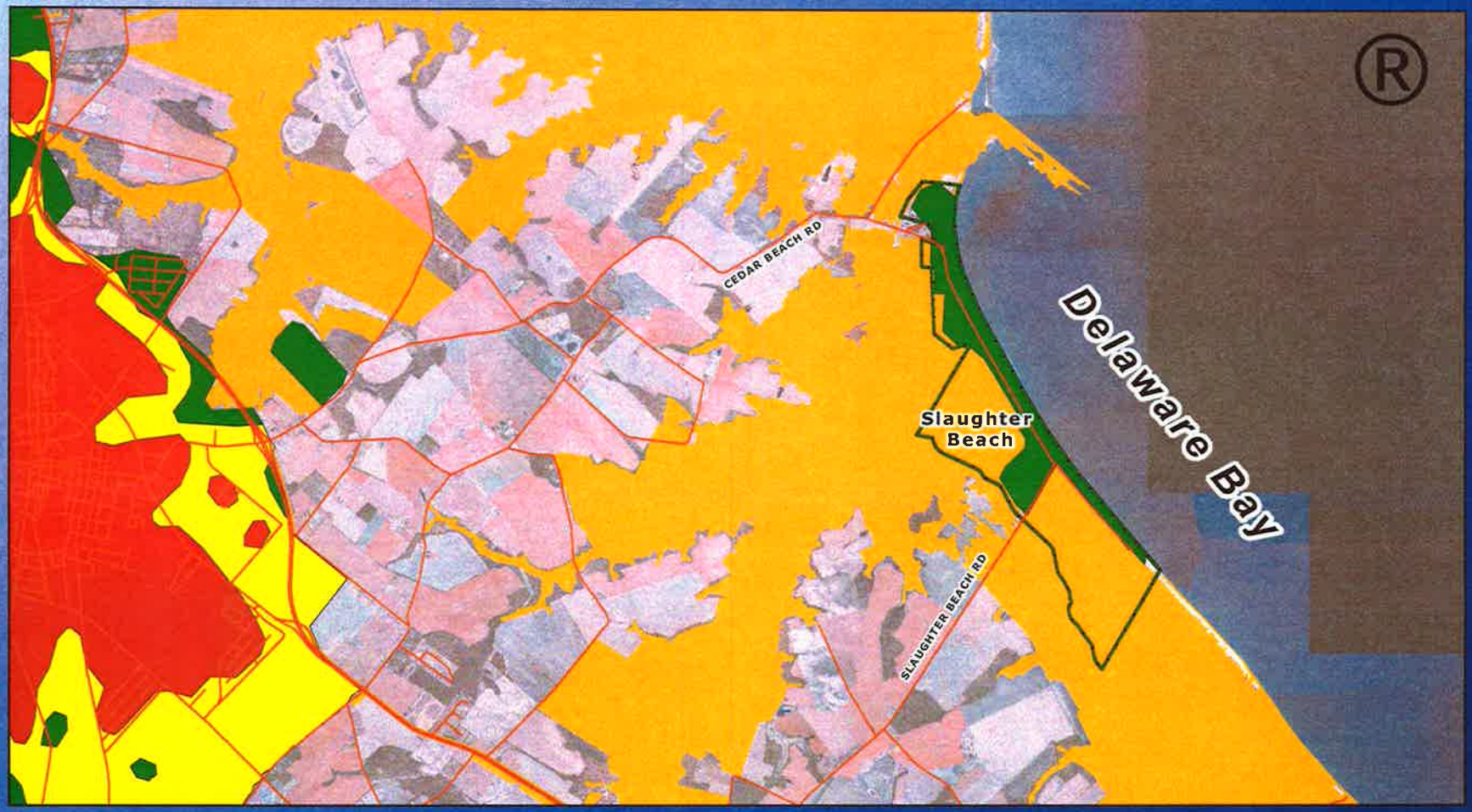
Town of Slaughter Beach, Sussex County Delaware



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Municipal Boundary: munbounds.shp
State Strategies Layer: state_strategies_2004.shp
Out of Play Land: other_oop.shp

Map 2 - This map is to serve as a graphic representation of the areas generally favored for growth under the State Strategies for Policies and Spending. It should not be used without reference to the detailed strategies document, available on-line at www.state.de.us/planning/strategies. This map is not intended to serve as a regulatory map. "Out of Play Land" is Public-owned or legally restricted land.

Legend

- Slaughter_Beach_Boundary
- Sussex County Road

State Strategies 2004

- Level 1
- Level 2
- Level 3
- Out of Play Lands

Delaware State Strategy Levels 2004

Map 2

0 2,500 5,000 10,000 15,000 20,000 25,000 Feet

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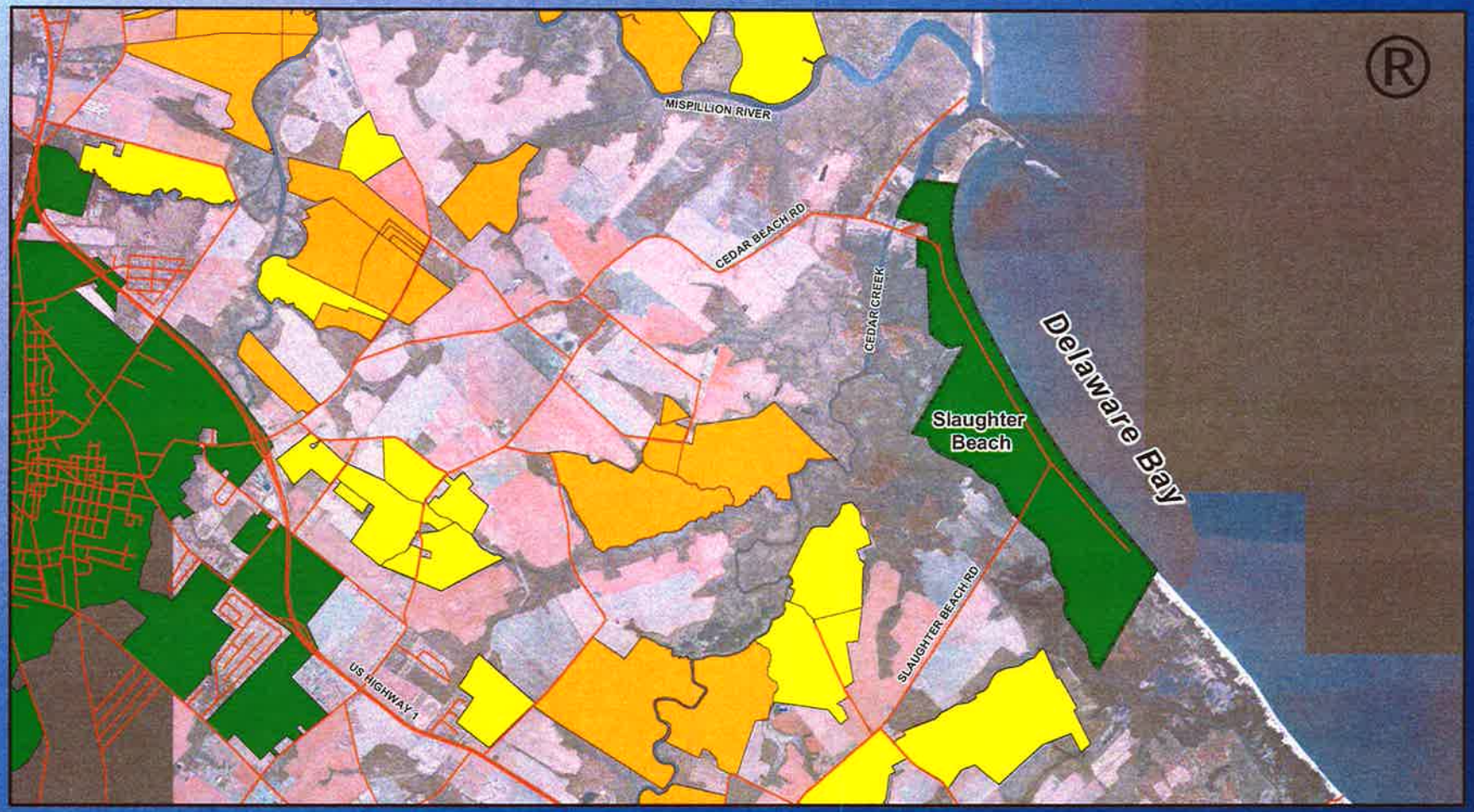
Note: State Strategies 2004
All other areas other than "Levels 1-3" and "Out of Play Lands" are considered Level 4.

Town of Slaughter Beach, Sussex County Delaware



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Roads: Sussex_County_center_line.shp
Municipal Boundary: munbounds.shp
State Agriculture Districts: state_ag_districts.shp
State Agriculture Easements: state_ag_easements.shp

Map 3 - Delaware Agricultural Districts and Easements polygon shape files are tax parcel based representation of the lands that are preserved by the Delaware Agricultural Lands Preservation Foundation (DALPF). These lands include farms that have sold or donated their development rights to the Foundation as well as farms that agree not to develop their land for a period of ten years.

Delaware Municipal Boundaries - All annexations – the acts that change municipal boundaries – are required under state law to be reviewed by state agencies under the coordination of the Office of State Planning Coordination. When annexations are reported as approved by local governments, the Office updates the municipal boundary file.

Legend

- Delaware DOT Roads
- Slaughter Beach Boundary
- Municipal Boundaries
- State Agriculture Districts
- State Agriculture Easements

Delaware State Strategies - Agricultural Areas

Map 3

0 2,500 5,000 10,000 15,000 20,000 25,000 Feet

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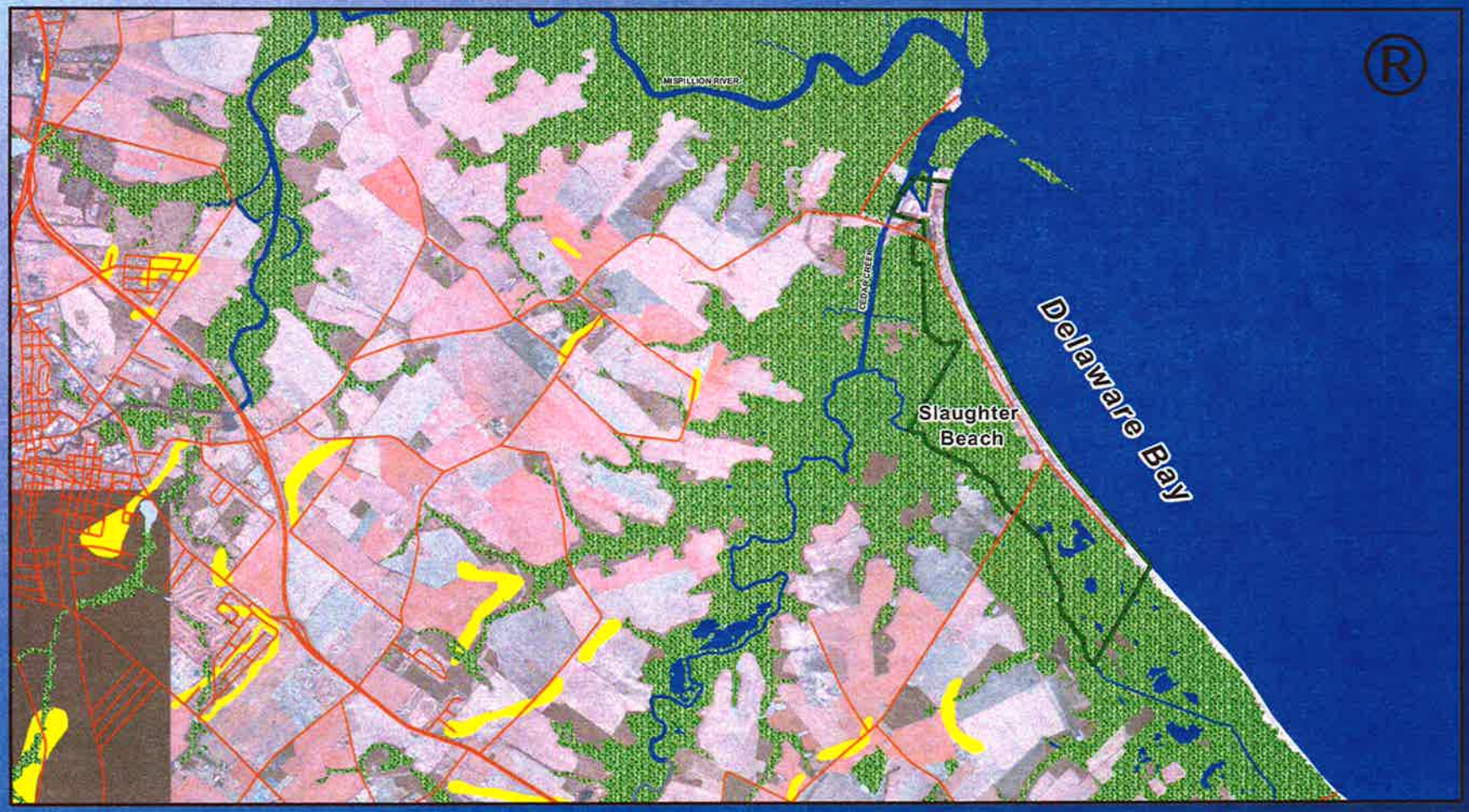
ENVIRONMENTAL RESEARCH, INC.
5207 JOHN MARSHALL HWY
SUITE C
LINDEN, VA. 22642

Town of Slaughter Beach, Sussex County Delaware



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Municipal Boundary: munbounds.shp
Wetlands / Hydrology: 2002_delaware_lulc.shp
Excellent Recharge Areas: Excellent_Recharge_Areas.shp

Map 4 - Wetland/Hydrology features - Aerial imagery was collected in 2002 and was used to update the 1997 Land Use and Land Cover data set. This is the version of the 2002 Land Use and Land Cover data set. The town of Slaughter Beach has approximately 636 acres of wetlands within the municipal boundary.

Excellent Recharge Areas - Ground-water recharge potential maps show land areas characterized by there abilities to transmit water from land surface to a depth of 20 feet.

Legend

- Delaware DOT Roads
- Slaughter Beach Boundary

Wetlands/Hydrology

- Bays and Coves
- Man-made Reservoirs
- Wetlands
- Excellent Recharge Areas

DNREC Identified Wetlands and Hydrology

Map 4

0 2,500 5,000 10,000 15,000 20,000 25,000 Feet

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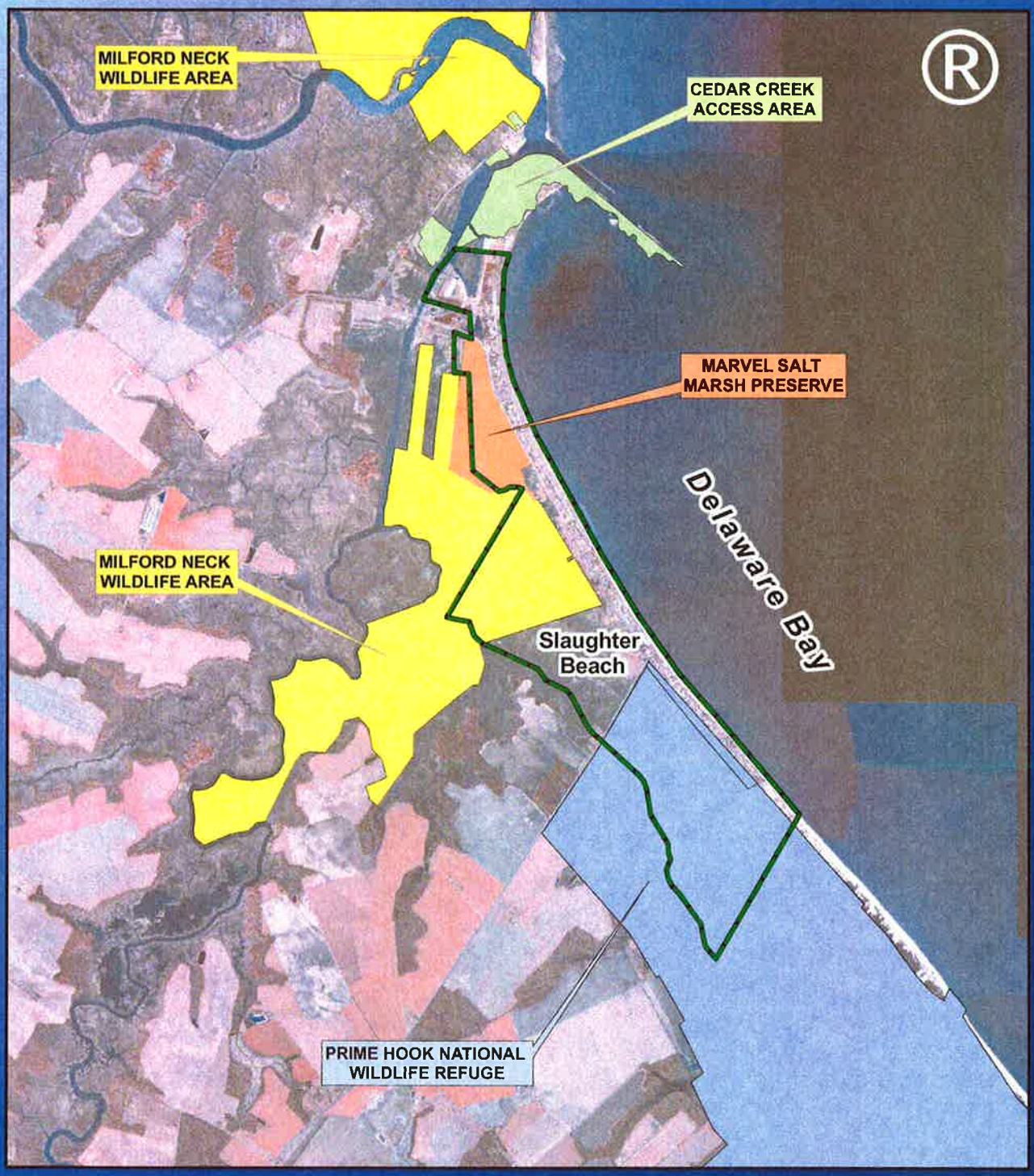
Town of Slaughter Beach, Sussex County Delaware



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Municipal Boundary: munbounds.shp
Prime Hook NWR: Prime_Hook_NWR.shp
Marvel Salt Marsh Preserve: DNS_Areas.shp
Fish & Wildlife Areas: Fish_and_Wildlife_Areas.shp

Map 5 - This map represents protected lands in and surrounding the town of Slaughter Beach. Prime Hook National Wildlife Refuge, to the south is made up of costal wetlands totaling 8,817 acres. Milford Neck Wildlife Area to the north and west is made up of over 2,000 acres. Also included are Cedar Creek Access Area and Marvel Salt Marsh Preserve.

Legend

- Slaughter Beach Boundary
- Prime Hook NWR
- Marvel Salt Marsh Preserve
- CEDAR CREEK ACCESS AREA
- MILFORD NECK WILDLIFE AREA

Wildlife Conservation Areas

Map 5

0 1,250 2,500 5,000 7,500 10,000 Feet

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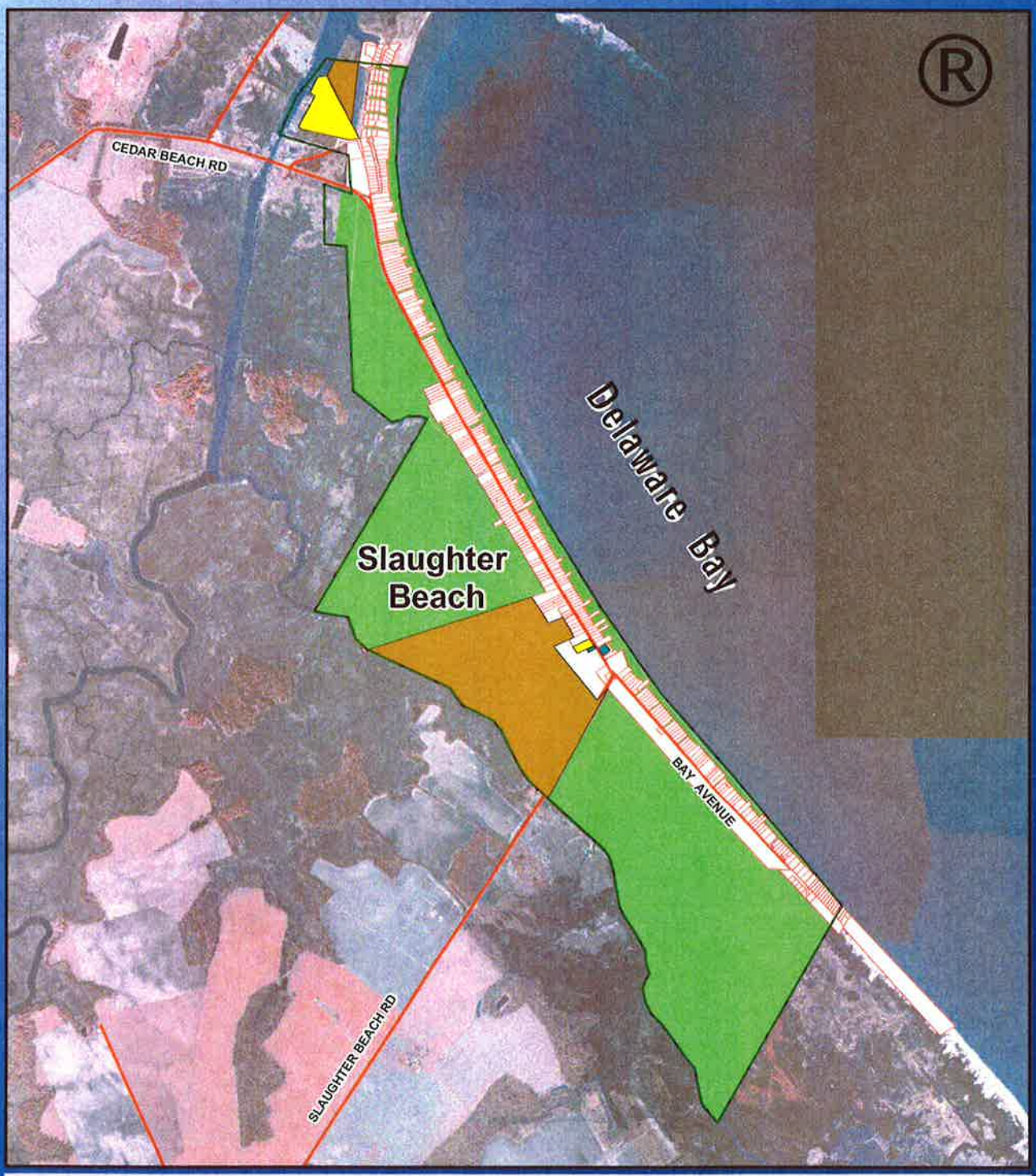
Town of Slaughter Beach, Sussex County Delaware



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Delaware DOT Roads: Delaware DOT Roads.shp
Slaughter Beach Parcels: Slaughter_Beach.shp
Zoning: Zoning.shp
Open Space: Open_Space.shp

Map 6 - Slaughter Beach Existing Land Use displays Residential, Emergency Services, Commercial Properties, and Open Space. The town of Slaughter Beach has approximately 594 acres of "Open Space" within the municipal boundary.

Legend

- Commercial
- Commercial-Agriculture
- Emergency Services
- Residential
- Open Space
- Slaughter_Beach_Boundary
- Delaware DOT Roads

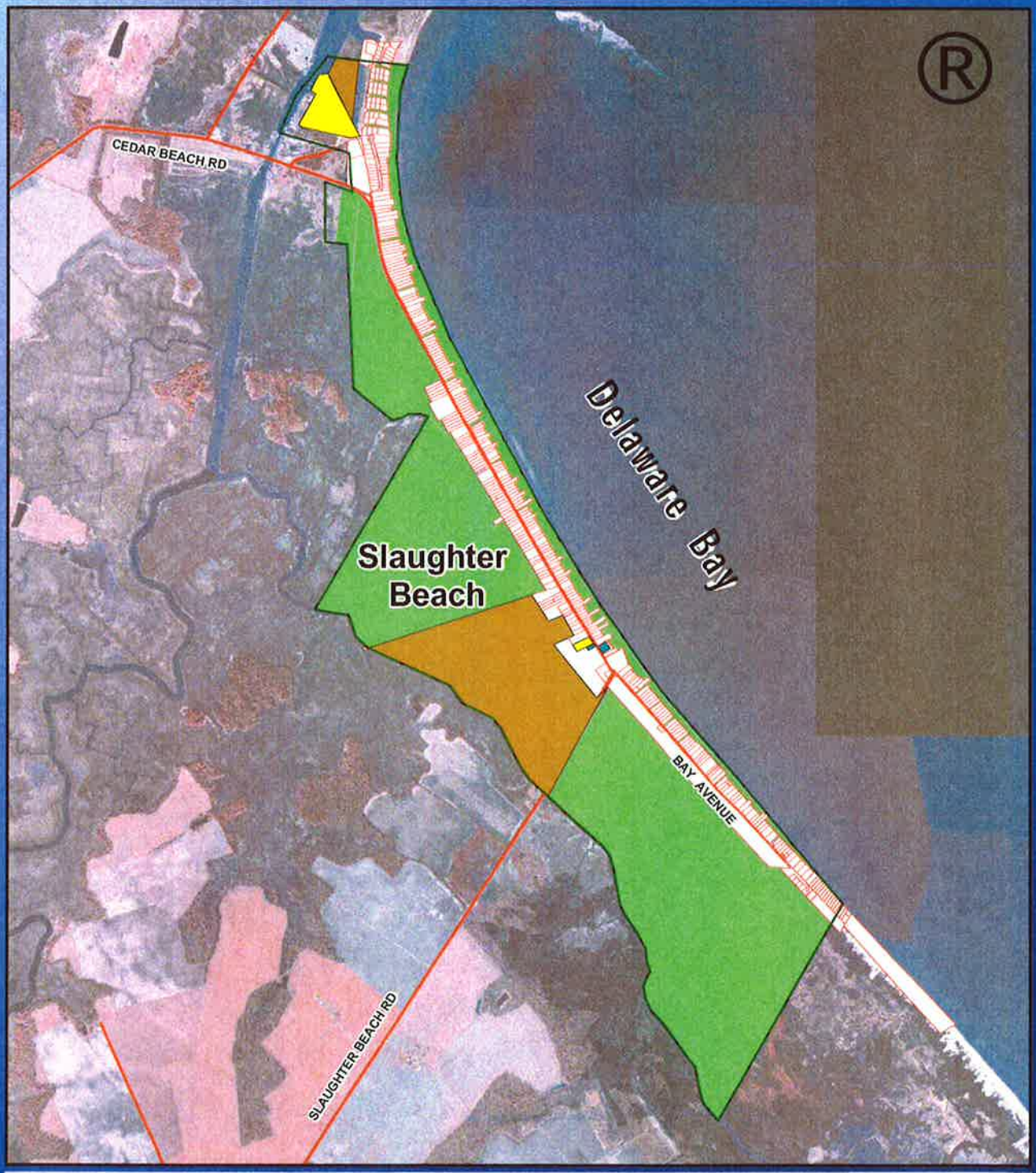
Slaughter Beach Existing Land Use

Map 6

0 500 1,000 2,000 3,000 4,000 5,000 Feet

ERI

Town of Slaughter Beach, Sussex County Delaware



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Delaware DOT Roads: Delaware DOT Roads.shp
Slaughter Beach Parcels: Slaughter_Beach.shp
Zoning: Zoning.shp
Open Space: Open_Space.shp

Map 6 - Slaughter Beach Future Land Use displays Residential, Emergency Services, Commercial Properties, and Open Space. The town of Slaughter Beach has approximately 594 acres of "Open Space" within the municipal boundary. There is no change for future developement of Slaughter Beach.

Slaughter Beach Future Land Use

Map 7

0 500 1,000 2,000 3,000 4,000 5,000 Feet

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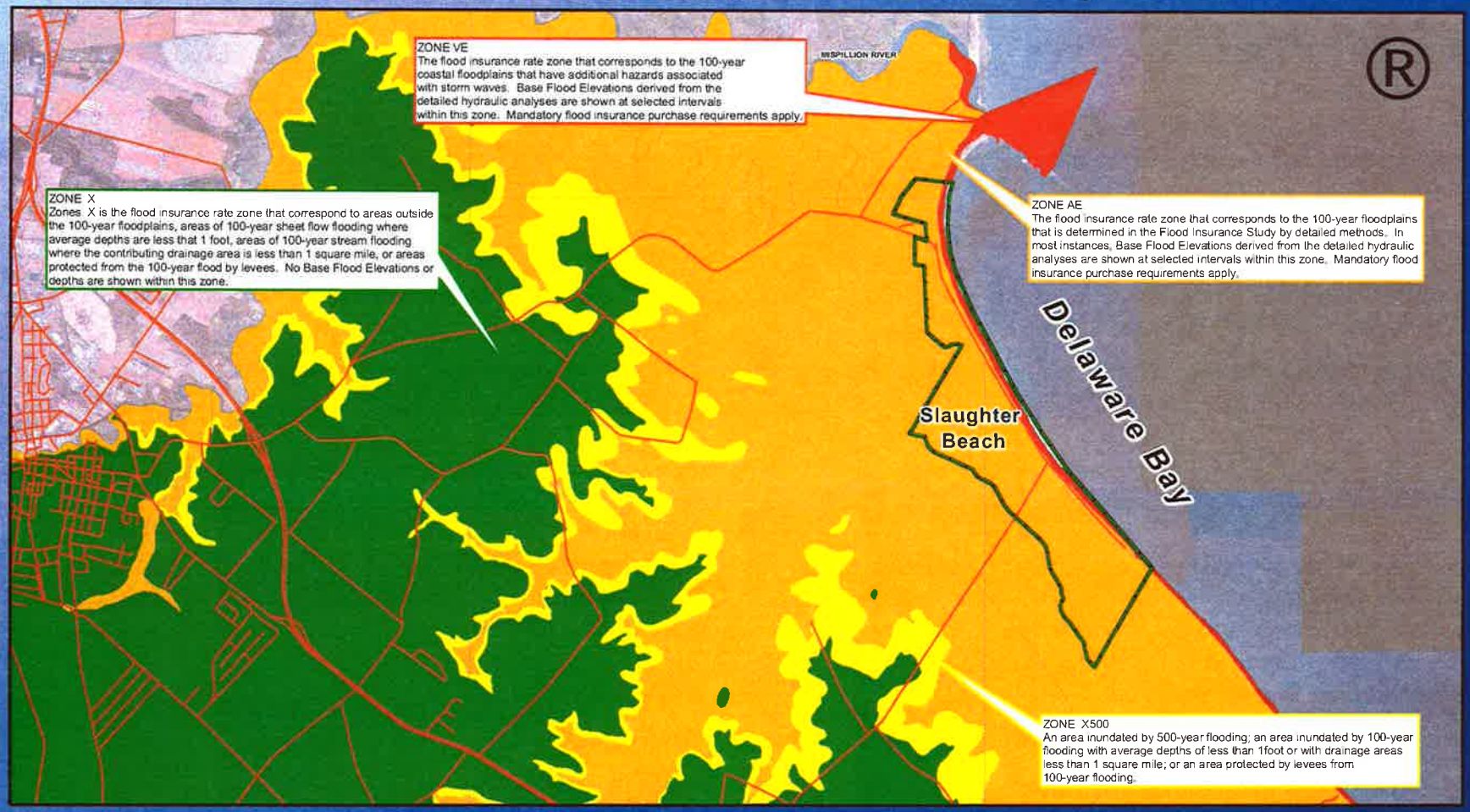
Legend

- Commercial
- Commercial-Agriculture
- Emergency Services
- Residential
- Open Space
- Slaughter_Beach_Boundary
- Delaware DOT Roads

Town of Slaughter Beach, Sussex County Delaware



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Geo-coordinate-system: GCS_North_American_1983
Roads: Sussex_County_center_line.shp
Slaughter Beach Boundary: munbounds.shp
Sussex County Q3 Data: c5_arc (Feature Class)

Map 7 - The Q3 Flood Data are derived from the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA). This file was published by FEMA in 1996 and downloaded from Delaware DataMIL. Special Flood Hazard Area (SFHA) - Any area inundated by the base (1% annual chance) flood; these areas are identified on the FIRM as Zones A, AE, AH, AO, AR, A1-30, A99, V, VE, and V1-30.

Legend
- Slaughter Beach Boundary
- Delaware DOT Roads

Q3 Flood Zone
- AE
- VE
- X
- X500

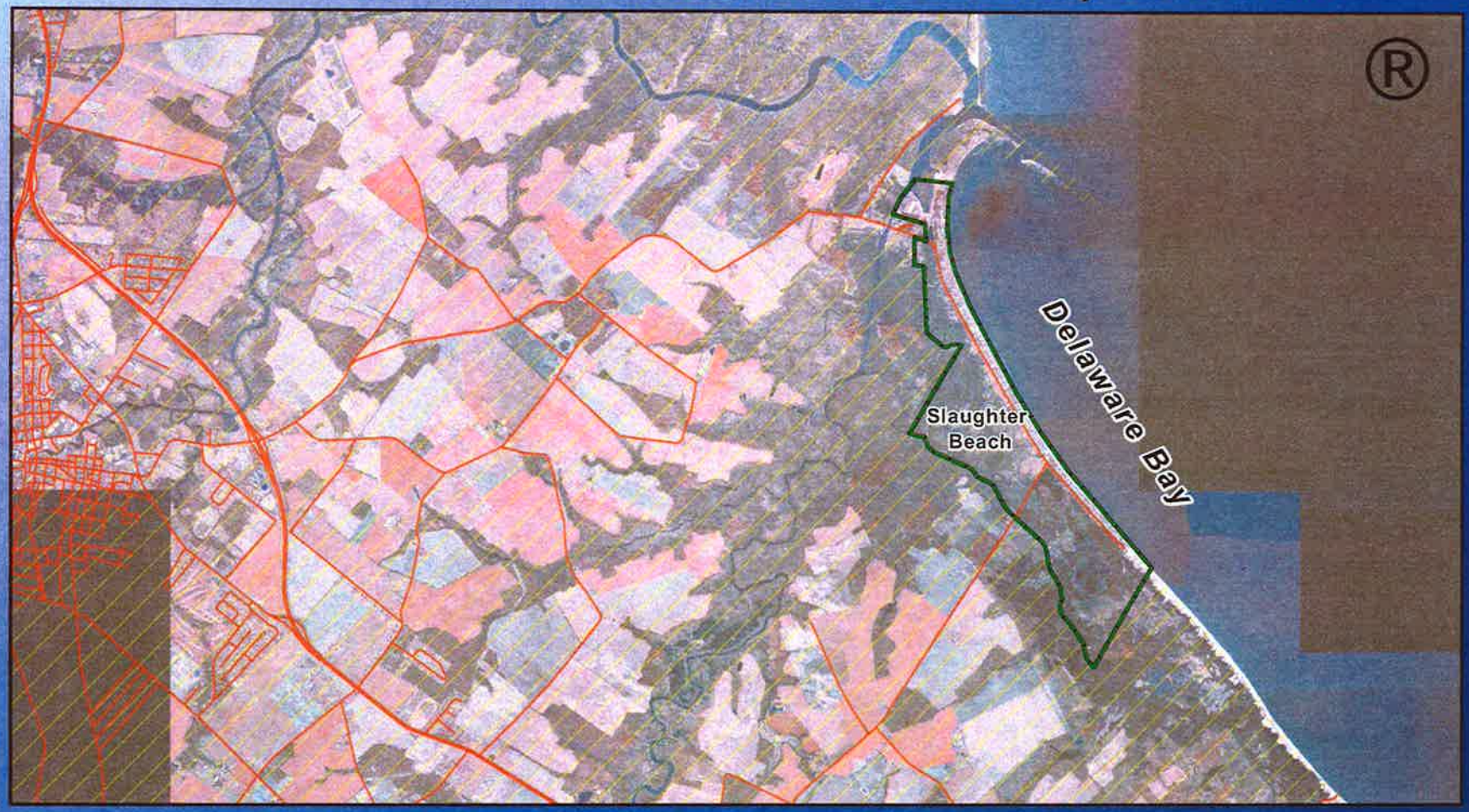
Q3 FEMA Flood Data - Sussex County, Delaware

Map 8

0 2,500 5,000 10,000 15,000 20,000 25,000 Feet

ERI
ENVIRONMENTAL RESEARCH, INC.

Town of Slaughter Beach, Sussex County Delaware



Digital Orthophotography provided by State of Delaware of Color Infared 2002 aerial imagery.
Projection: NAD_1983_StatePlane_Delaware_FIPS_0700
Geo-coordinate-system: GCS_North_American_1983
Roads: Sussex_County_center_line.shp
Slaughter Beach Boundary: munbounds.shp
Areas of Concern: Areas_of_Concern.shp

Map 8 - All areas of the Slaughter Beach CLUP Study Area are considered Area of Concern. Areas of Concern are lands with which the town is very concerned about future developement, since the consequences could effect the town

Legend
- Slaughter Beach Boundary
- Delaware DOT Roads
- Areas of Concern

Slaughter Beach Study Area - Area of Concern

Map 9

0 2,500 5,000 10,000 15,000 20,000 25,000 Feet

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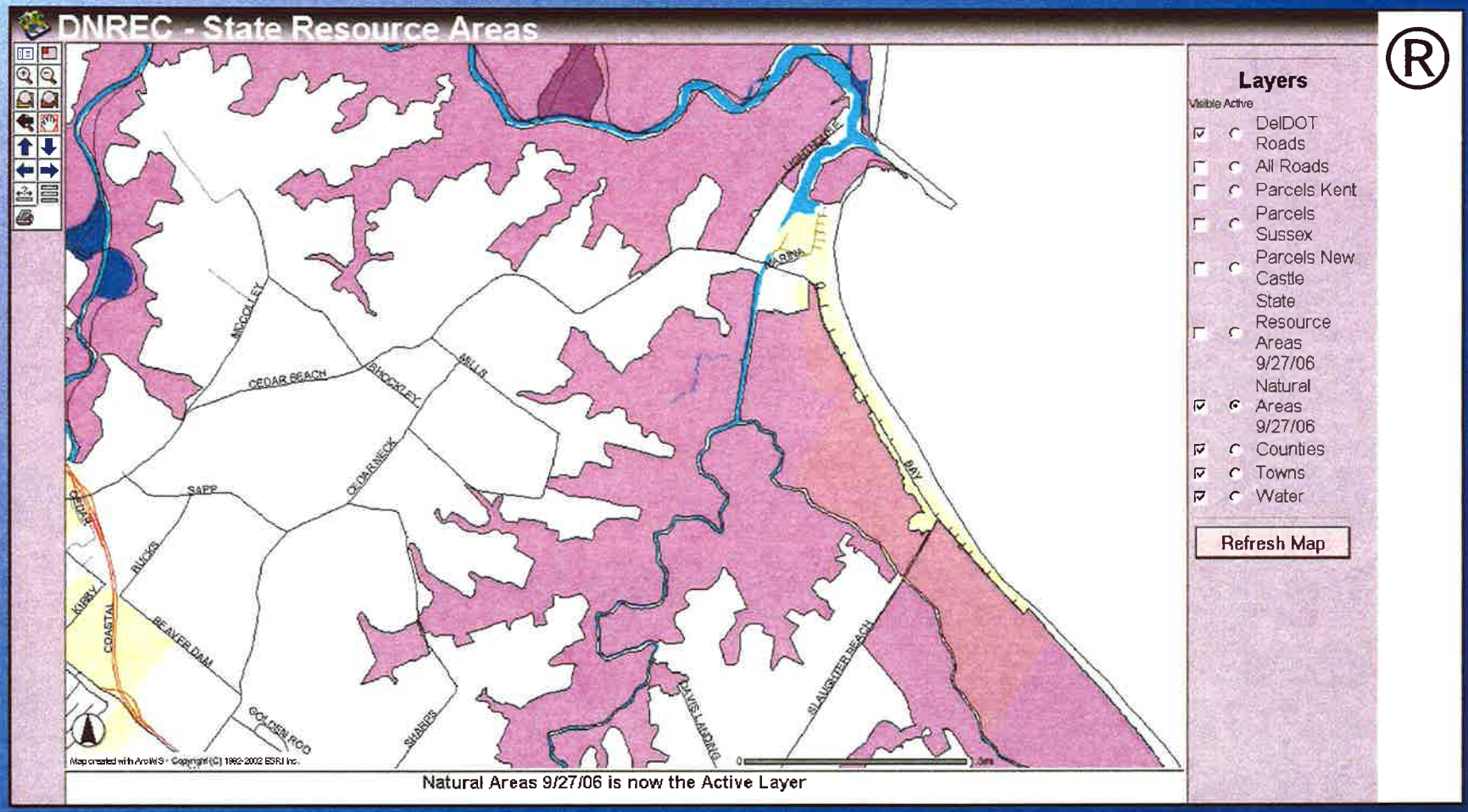
Town of Slaughter Beach, Sussex County Delaware



"Delaware Department of Natural Resources Map" obtained from:
http://www.dnrec.delaware.gov/GI/GISRAMaps.htm

Map was created through the "Interactive Proposed SRAs and NAs" link on "GISRAMaps.htm" website.

Map 10 - Delaware Department of Natural Resources Map showing Exsisting and Proposed Natural Areas. The mapping involved reviewing the whole state on almost an acre by acre basis for individual mapping layers against the 2002 aerial photography, redigitizing lines, excluding/adding areas based on field conditions/knowledge of the area; reviewing the same data again after water, roads and development were excluded to eliminate miscellaneous data; reviewing each layer against each other to make sure all edits were consistent across layers; and resolving differences among the 4 basic original map layers (Green Infrastructure/Wildlife Action Plan/SRA/NA) that were used to produce the final items above.

Legend

- Delaware DOT Roads
- Natural Areas
- Town of Slaughter Beach

DNREC Proposed Natural Resource Map

Map 10

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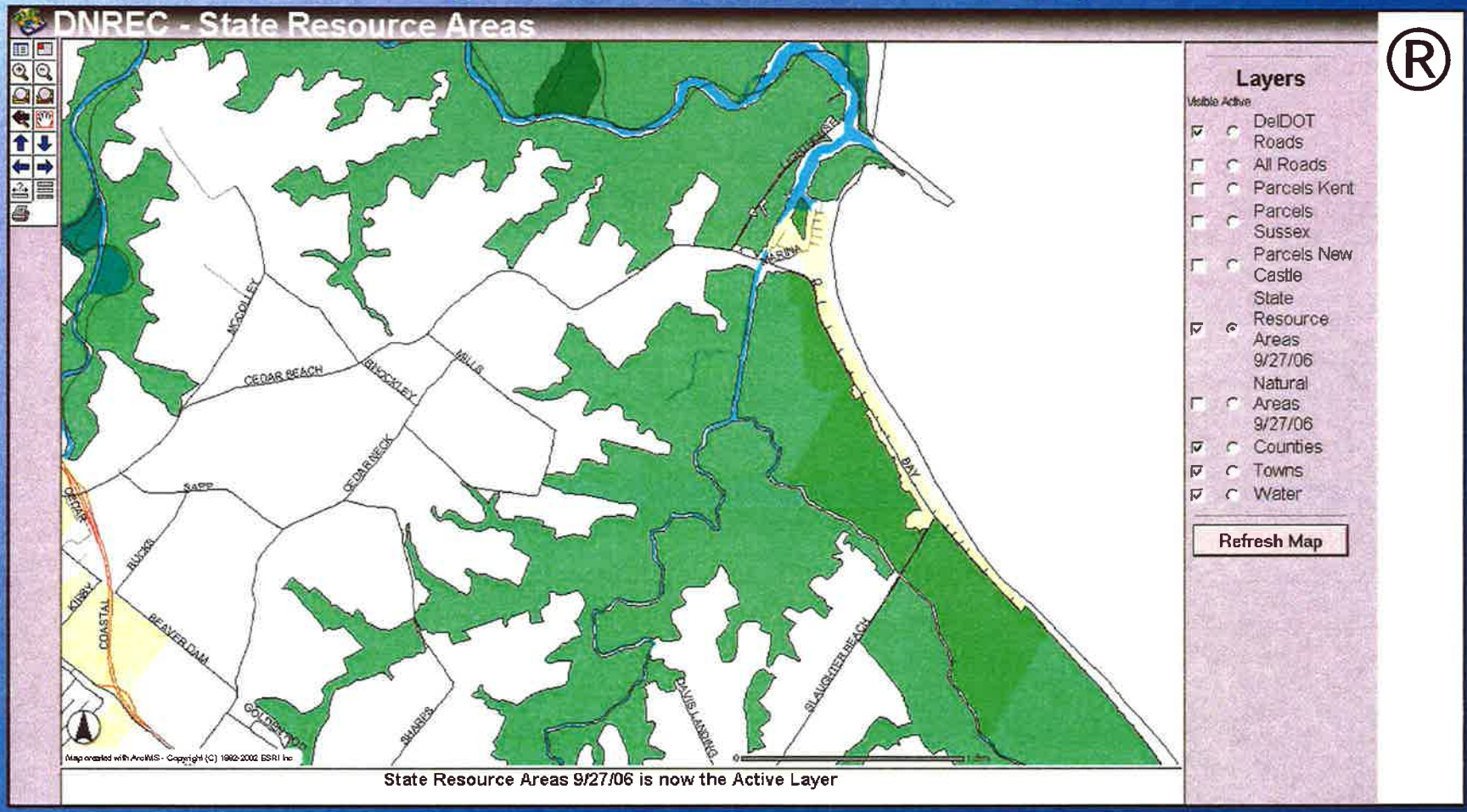
Town of Slaughter Beach, Sussex County Delaware



"Delaware Department of Natural Resources Map" obtained from: http://www.dnrec.delaware.gov/GI/GISRAMaps.htm

Map was created through the "Interactive Proposed SRAs and NAs" link on "GISRAMaps.htm" website.

Map 11 - Delaware Department of Natural Resources Map showing Exsisting and Proposed State Resource Areas. The mapping involved reviewing the whole state on almost an acre by acre basis for individual mapping layers against the 2002 aerial photography, redigitizing lines, excluding/adding areas based on field conditions/knowledge of the area; reviewing the same data again after water, roads and development were excluded to eliminate miscellaneous data; reviewing each layer against each other to make sure all edits were consistent across layers; and resolving differences among the 4 basic original map layers (Green Infrastructure/Wildlife Action Plan/SRA/NA) that were used to produce the final items above.

Legend

- Delaware DOT Roads
- State Resource Areas
- Town of Slaughter Beach

DNREC Proposed State Resource Map

Map 11

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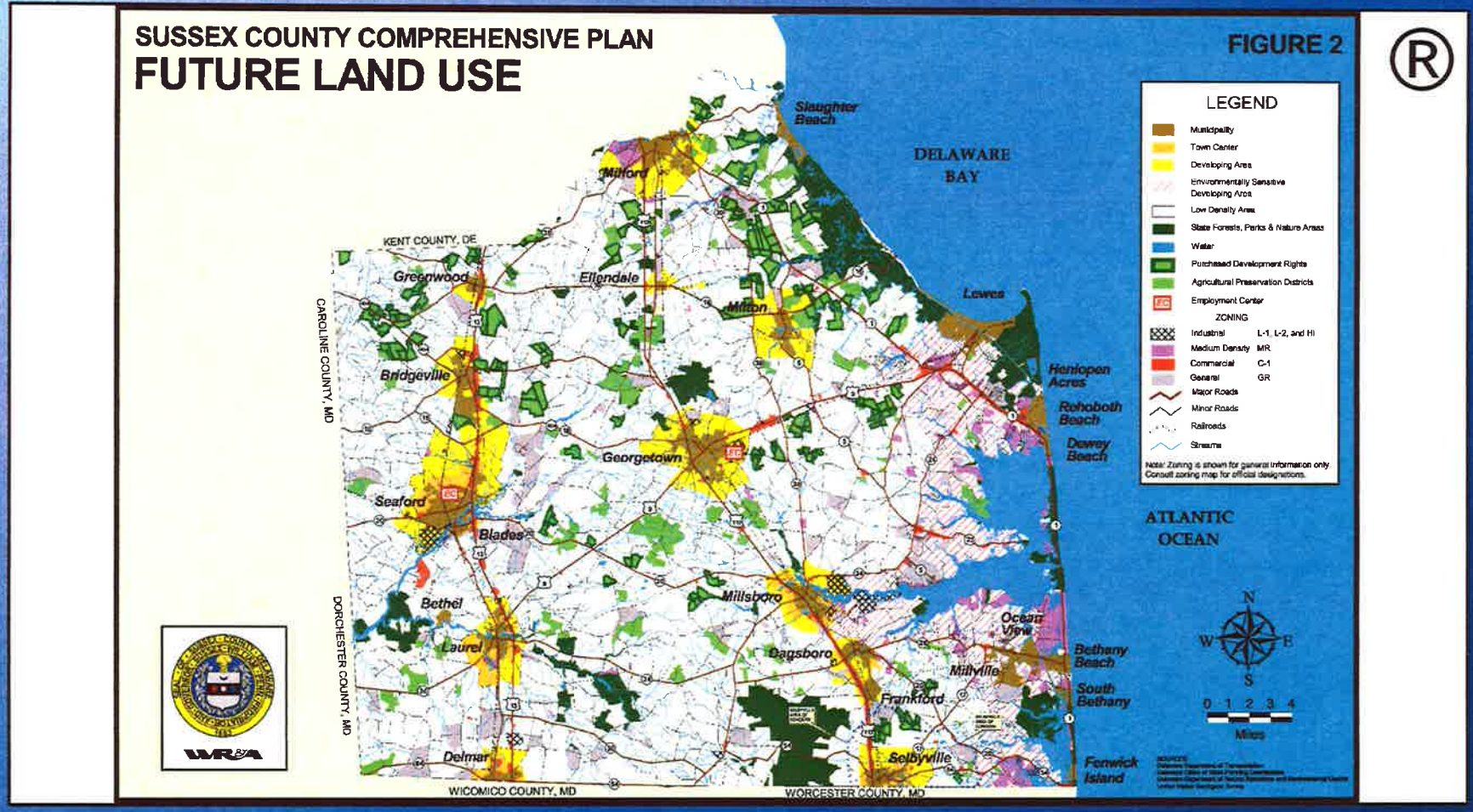
Town of Slaughter Beach, Sussex County Delaware



"Sussex County Comprehensive Plan-Future Land Use" map was obtained from the following website: http://www.sussexcountyde.gov/departments/countycouncil/CompleteCompPlan.pdf

Map 12 - Map of Sussex County Delaware showing Future Land Use for the county. This map is part of the Sussex County Comprehensive Landuse Plan published January 1, 2003.

Map 12

Sussex County Future Land Use
From Sussex County Comprehensive Plan Update

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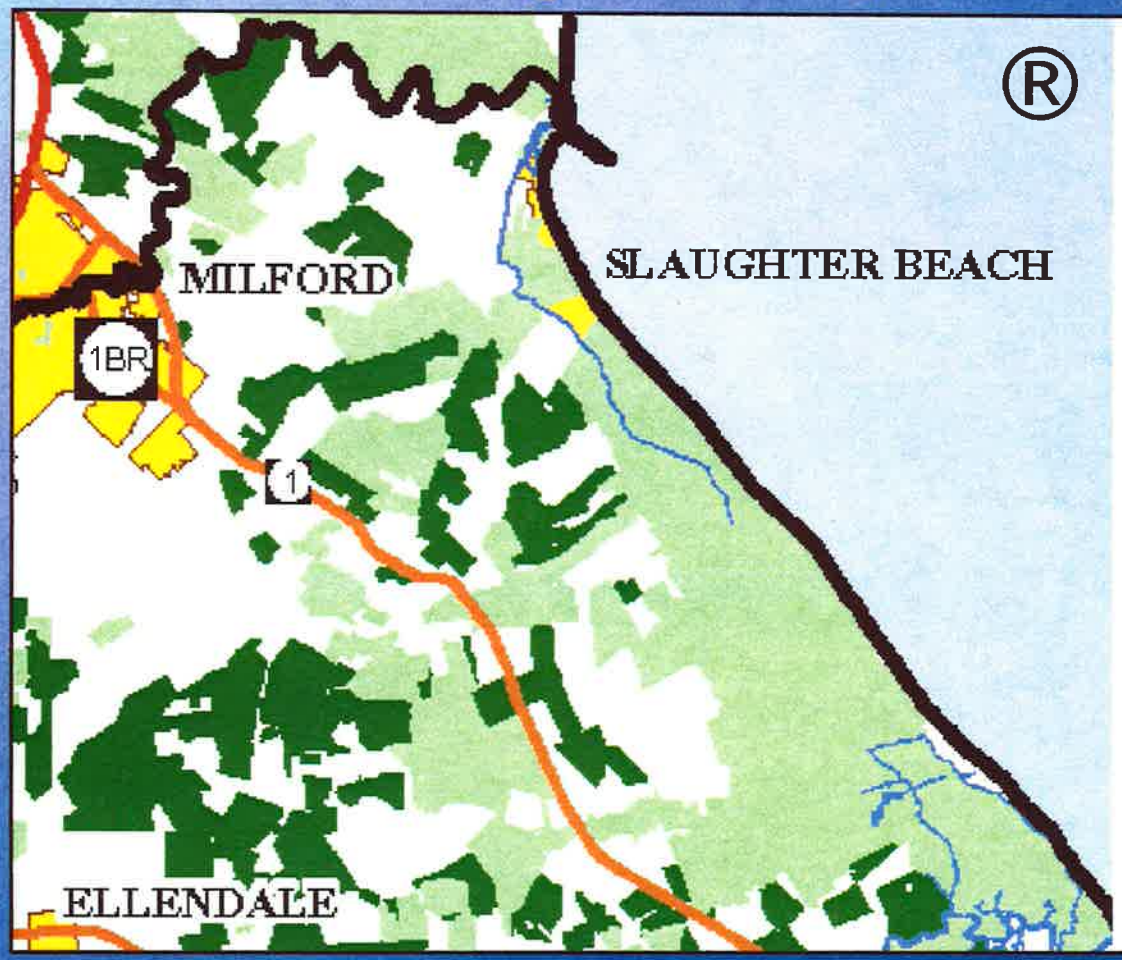
Town of Slaughter Beach, Sussex County Delaware



- The Forestland layer depicts the highest ranking 50% of the remaining unpreserved parcels with forestland that occur outside of state designated growth areas. This data was derived through use of the nationally recognized Land Evaluation Site Assessment system. This mapped data should be reviewed in conjunction with the text of the Livable Delaware Advisory Council approved "Green Infrastructure Strategy."

"Green Infrastructure of Delaware Forestland Focus Areas" map was obtained from the following website: http://www.dnrec.delaware.gov/GI/GIPlanning.htm

Map 13 - Green Infrastructure of Delaware Forestland Focus Areas Map. Green Infrastructure is Delaware's natural life support system of parks and preserves, woodlands and wildlife areas. wetlands and waterways, productive agricultural and forest land, greenways, cultural and recreational sites and other natural areas, all with conservation value.

Map 13

Green Infrastructure of Delaware Forestland Focus Areas

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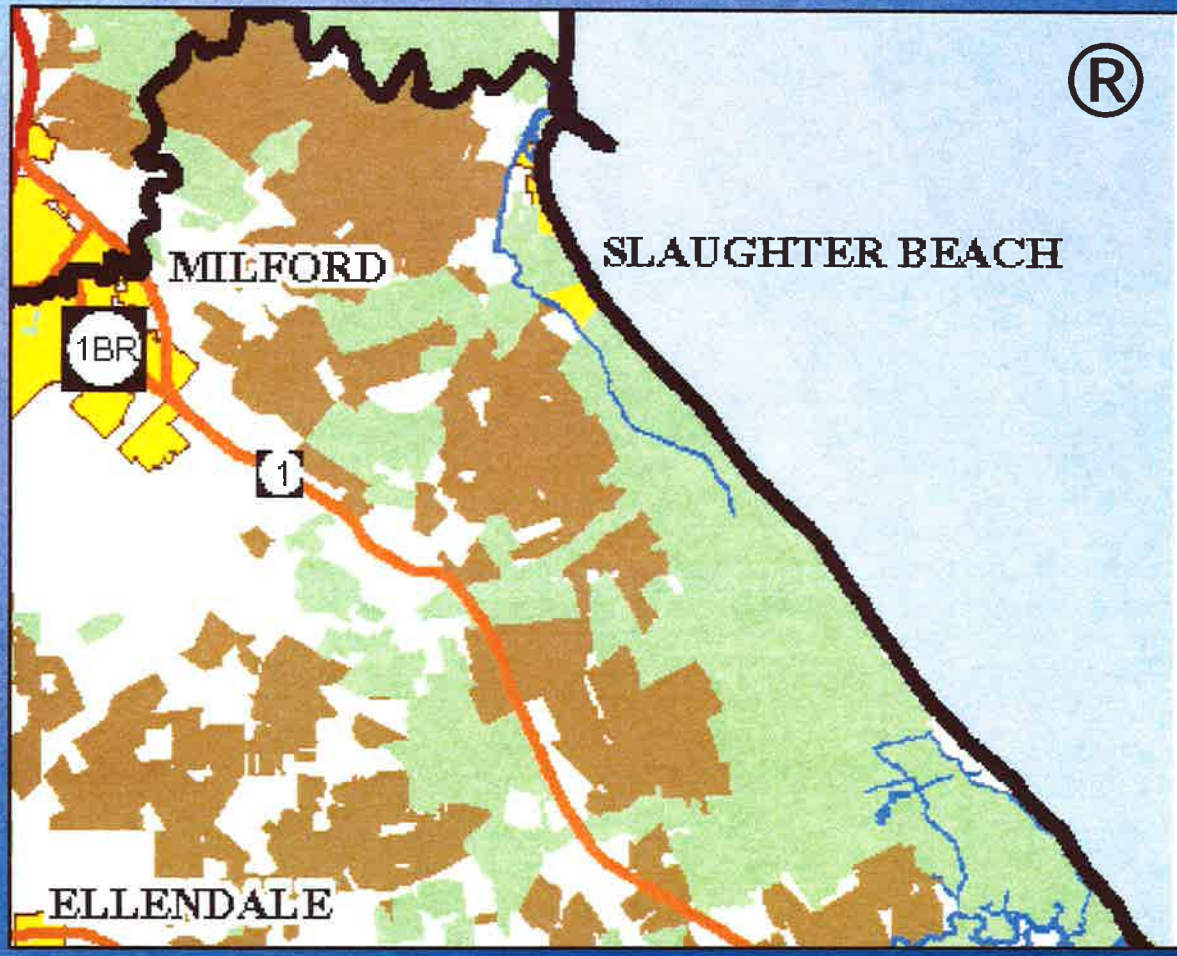
Town of Slaughter Beach, Sussex County Delaware



DDA Delaware Department of Agriculture

GREEN INFRASTRUCTURE OF DELAWARE

Cropland Focus Areas

MARCH 2004

LEGEND

- CROPLAND
- PRESERVED LANDS
- INCORPORATED MUNICIPALITIES
- WATER

- The Cropland layer depicts the highest ranking 50% of the remaining unpreserved parcels with cropland that occur outside of state designated growth areas. This data was derived through use of the nationally recognized Land Evaluation Site Assessment system. This mapped data should be reviewed in conjunction with the text of the Livable Delaware Advisory Council approved "Green Infrastructure Strategy."

"Green Infrastructure of Delaware Cropland Focus Areas" map was obtained from the following website: http://www.dnrec.delaware.gov/GI/GIPlanning.htm

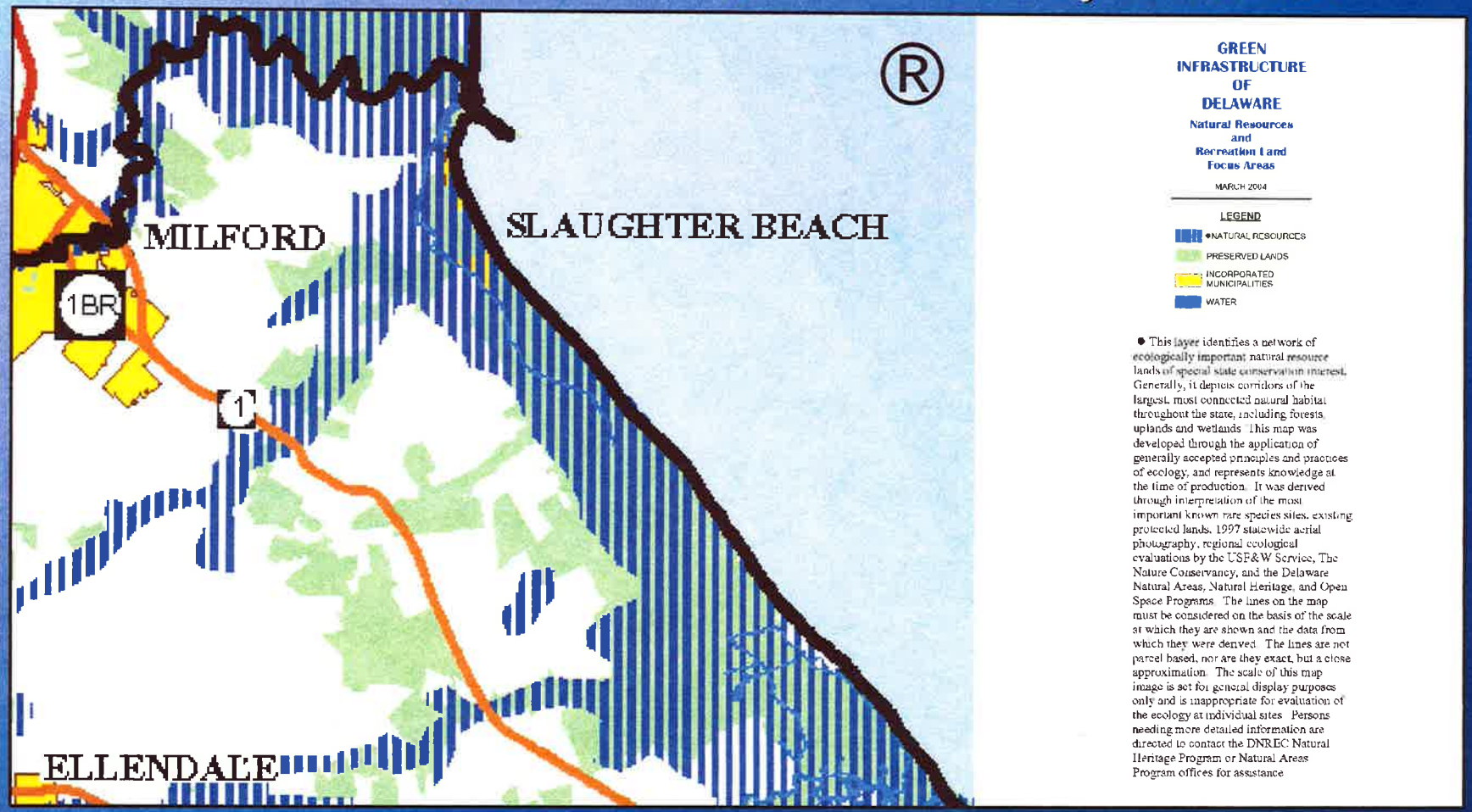
Map 14 - Green Infrastructure of Delaware Cropland Focus Areas Map. Green Infrastructure is Delaware's natural life support system of parks and preserves, woodlands and wildlife areas. wetlands and waterways, productive agricultural and forest land, greenways, cultural and recreational sites and other natural areas, all with conservation value.

Map 14

Green Infrastructure of Delaware Cropland Focus Areas

ERI

Town of Slaughter Beach, Sussex County Delaware



"Green Infrastructure of Delaware Natural Resources and Recreation Land Focus Areas Focus Areas" map was obtained from the following website: http://www.dnrec.delaware.gov/GI/GIPlanning.htm

Map 15 - Green Infrastructure of Delaware Natural Resources and Recreation Land Focus Areas Focus Areas Map. Green Infrastructure is Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterwa productive agricultural and forest land, greenways, cultural, historical, and recreatior sites and other natural areas, all with conservation value.

Map 15 **Green Infrastructure of Delaware**
Natural Resources and Recreation Land Focus Areas

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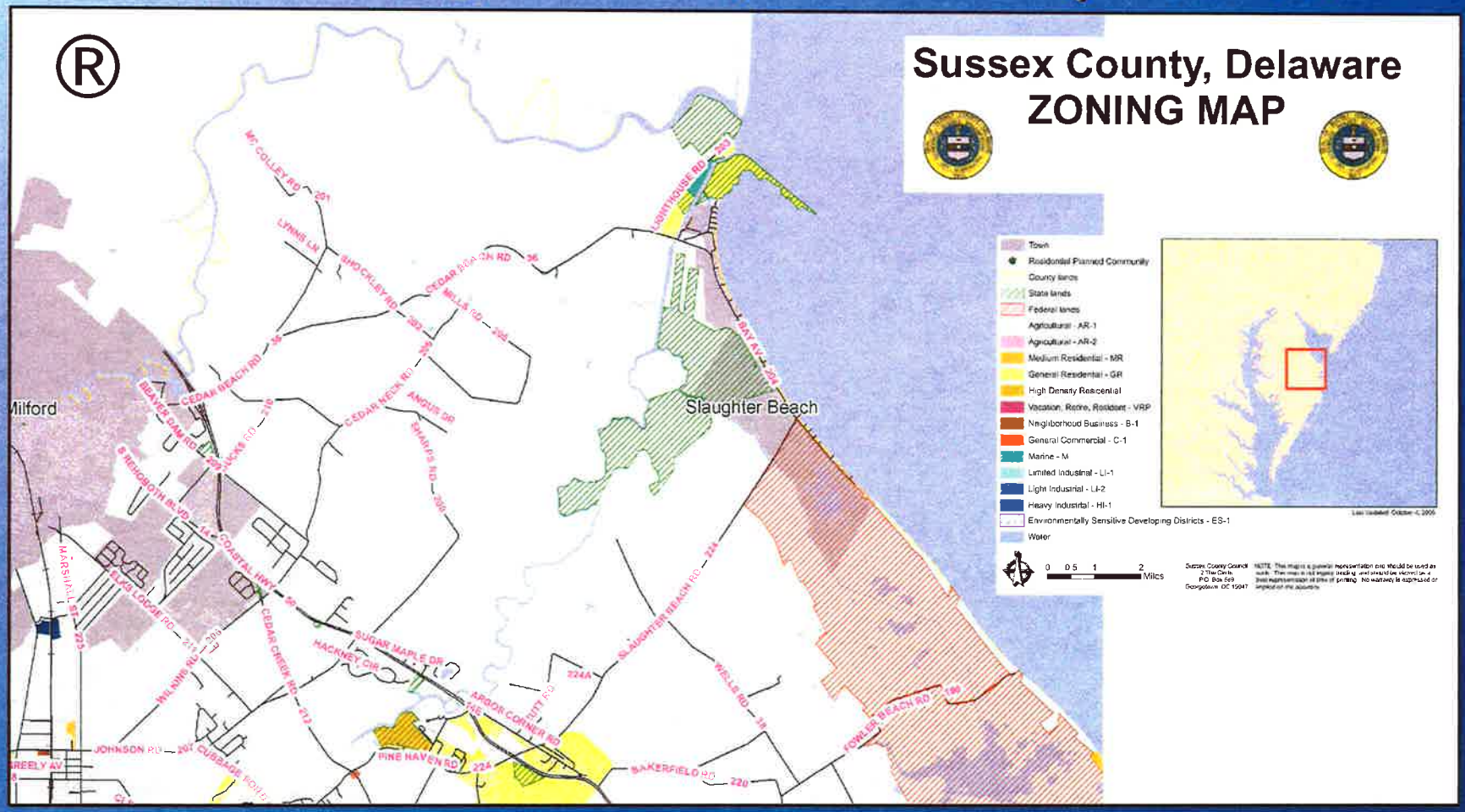
Town of Slaughter Beach, Sussex County Delaware



"Sussex County, Delaware Zoning" map was obtained from the following website: http://www.sussexcountyde.gov/departments/mapaddress/maplisting/Zoning%20Map.pdf

Map 16 - Sussex County Zoning Map updated October 4, 2005. NOTE: This map is a general representation and should be used as such. This map is not legally binding, and should be viewed as a best representation at time of printing. No warranty is expressed or implied on the accuracy.

Map 16

Sussex County, Delaware
Zoning Map - October 4, 2005

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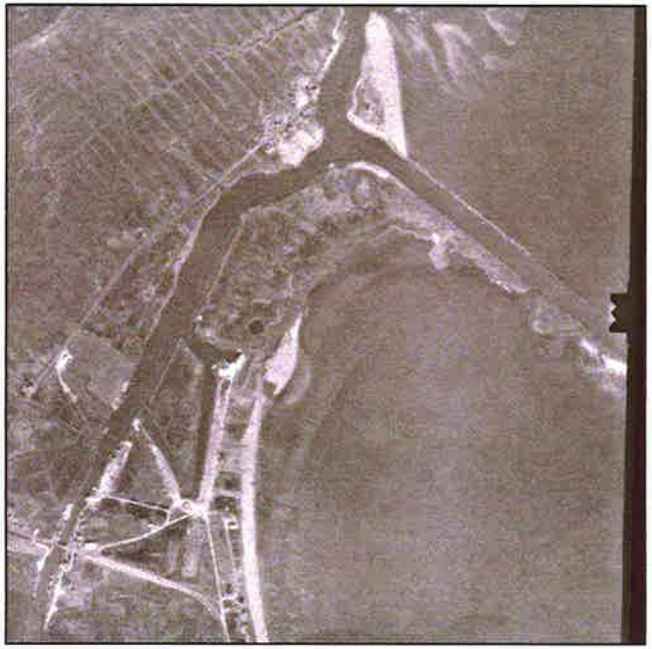
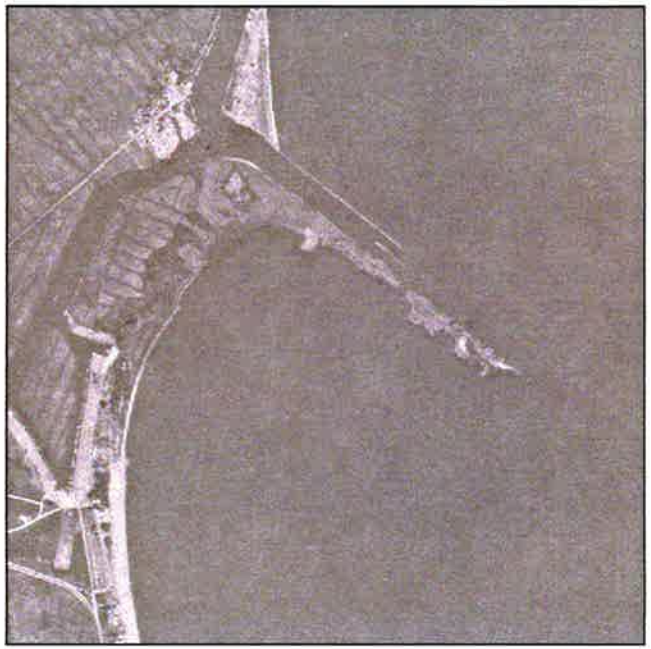
Slaughter Beach, Delaware Historical Photography

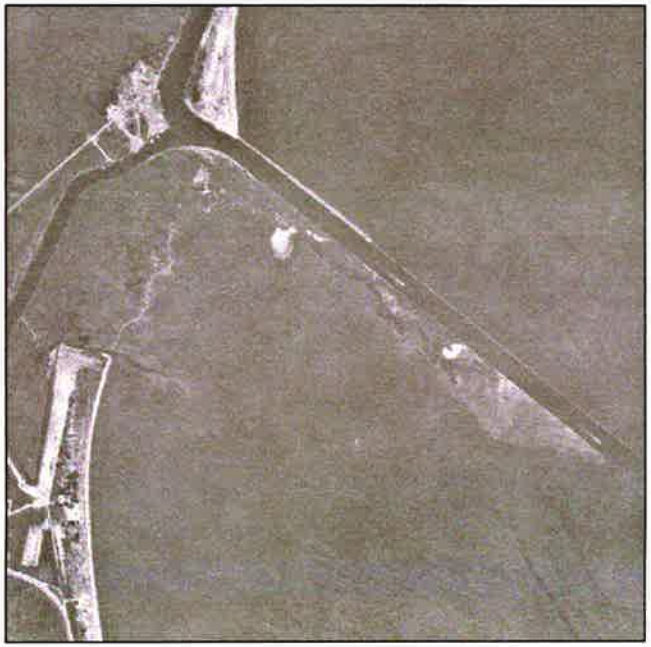
2002



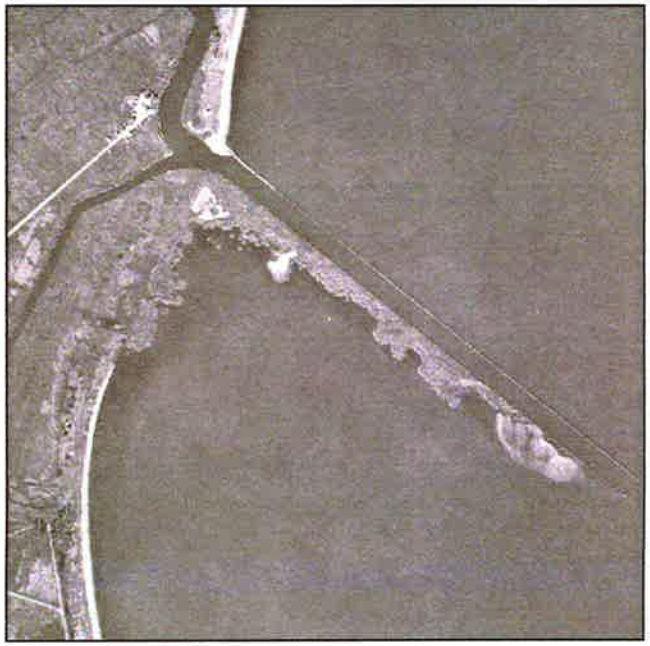
1981



1977



1968



1953

GEOLOGY of the SLAUGHTER BEACH CLUP STUDY AREA

The Slaughter Beach CLUP study area is situated in the Coastal Plain Province and is comprised of Shoreline Deposits, Marsh and Swamp Deposits, Carolina Bay Deposits, the Scotts Corners Formation, and the Lynch Heights Formation. The Land surface topography and morphology of the Slaughter Beach CLUP study area reflect both processes active during deposition of the surficial geologic units and those that have occurred since deposition.

The Columbia Formation covers most of northern and central Delaware and represents deposition following early Pleistocene glaciations in the northeastern Appalachians. Following the deposition of the Columbia Formation, sea level fell with renewed glaciations, and streams such as the Delaware River and its tributaries became deeply incised. During successive rises of sea level, erosion of the Columbia Formation occurred marginal to the valley of the Delaware River and its tributaries. The sediments of the Columbia Formation were reworked into bays, beach, marsh, and swamp deposits marginal to and within an ancestral Delaware Bay.

The historical shoreline of the Delaware Bay is marked by a change in slope (scarp) between 15 and 30 foot above sea level and 4 to 6 miles inland and roughly parallel of the present Delaware Bay. The scarp was produced by erosion of the land along the shoreline of the ancient bay that resulted in a subdued wave-cut feature. An example of a prehistoric shoreline is located along Route 36 from Milford towards Slaughter Beach, in a fairly flat, straight stretch, of road that abruptly drops approximately 10 feet in elevation.

The cycle of erosion and deposition related to sea level fluctuations has occurred several times since the deposition of the Columbia Formation. The oldest deposits of this type occurred approximately 250,000 years ago and are preserved in the Lynch Heights Formation. The Scotts Corners Formation represents a more recent time of sedimentation of approximately 90,000 to 120,000 years ago. At some point after the deposition of the Scotts Corners Formation the Carolina Bays were formed and their associated sediments laid down. The most recent deposition began in the Slaughter Beach CLUP study area about 12,000 years ago and is continuing at present with modern swamp, marsh, beach, and bay deposits.

Slaughter Beach, Delaware

WETLANDS

Wetlands in their natural state provide a wealth of values to society. These benefits can be divided into three basic categories: (1) fish and wildlife values, (2) environmental quality values, and (3) socio-economic values.

Fish and Wildlife Values

Both inland and coastal wetlands are essential to maintaining important fish populations. Estuarine wetlands are important producers of shrimp, crabs, oysters and clams for human consumption. Estuarine aquatic beds, in general, also provide important cover for juvenile fishes and other estuarine organisms. According to state fisheries biologists, about 98% of Delaware's commercially-important fishes are wetland-dependent. Nearly all freshwater fishes can be considered wetland-dependent because: (1) many species feed in wetlands or upon wetland-produced food, (2) many fishes use wetlands as nursery grounds and (3) almost all important recreational fishes spawn in the aquatic portions of wetlands. Important freshwater fishes in Delaware include large-mouth bass, white and black crappies, yellow perch, bluegill, pumpkinseed, brown bullhead and chain bluegill.

In addition to providing year-round habitats for resident birds, wetlands are especially important as breeding grounds, overwintering areas and feeding grounds for Atlantic Flyway migratory waterfowl and numerous other birds. Both coastal and inland wetlands serve these valuable functions.

Delaware's wetlands also provide essential habitats for other types of wildlife such as muskrats, beaver, otter, mink, raccoons, skunks, weasels, marsh and swamp rabbits, turtles, as well as many reptiles and amphibians.

Environmental Quality Values

Wetlands help maintain good water quality or improve degraded waters in several ways: (1) nutrient removal or retention, (2) processing chemical and organic wastes, and (3) reducing the sediment load of water. Wetlands are particularly good water filters because of their location between land and water. Thus, they can both intercept runoff from land before it reaches the water and help filter nutrients, wastes and sediment from flooding waters. Clean waters are important to people as well as to fish and wildlife.

Socio-economic Values

The more tangible benefits of wetlands to mankind may be considered socio-economic values and they include flood and storm damage protection, erosion control, water supply and ground-water recharge, harvest of natural products, livestock grazing and recreation. Since these values provide either dollar savings or financial profit, they are more easily understood and appreciated by most people.

The wetlands information for Slaughter Beach is part of the statewide wetlands mapping effort conducted jointly by the Delaware Department of Natural Resources & Environmental Control and the Delaware Department of Transportation. The wetlands are classified according to the nationally recognized Cowardin et.al., Classification of Wetlands and Deepwater Habitats of the United States.

Slaughter Beach, like most of the state of Delaware, falls within the nearly level Atlantic Coastal Plain. The upland portion of Slaughter Beach consists of a narrow strip of land between Delaware Bay and a large wetland ecosystem to the east. Ocean-driven tides are the dominant hydrologic feature of the wetlands of Slaughter Beach, therefore the majority of wetlands are classified as estuarine. The estuarine system consists of tidal brackish waters and contiguous wetlands where the bay water is at least occasionally diluted by freshwater runoff from the land. Emergent vegetation (grasses) is the dominant plant life within the wetlands of Slaughter Beach with smooth cordgrass (Spartina alterniflora), salt hay grass (Spartina patens), and common reed (Phragmites australis) dominating.

The wetlands to the west of Slaughter Beach continue to be dominated by the tidal influences from Delaware Bay via Cedar Creek and the Mispillon River. The upper reaches of these two tidal streams along with their tributaries contain freshwater forested, shrub, and emergent wetlands.

Slaughter Beach, Delaware

TOPOGRAPHY

Slaughter Beach, like most of the state of Delaware, falls within the nearly level Atlantic Coastal Plain. The elevation ranges from sea level (0 feet) to approximately 14 feet with the majority of land lying below 5 feet in elevation. The terrain to the west of Slaughter Beach, although remaining relatively flat does reach elevations approaching 30 feet near Route 1.