

OPEN SPACE AND RECREATION PLAN

for

**Township of Frelinghuysen
County of Warren**

“Preserving the Roads Less Traveled”



Compiled by



Morris Land Conservancy

a nonprofit land trust

with the

**Township of Frelinghuysen
Environmental Commission**

February 2006

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Space and Recreation Plan

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Jean Smolha
Jane Primerano, Secretary

Frelinghuysen Township Committee:

Thomas K. Charles, Mayor
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Brenda Kleber, Township Clerk

Warren County:

Warren County Planning Department
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Warren County Soil Conservation District
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EXECUTIVE SUMMARY

Frelinghuysen Township is located at the northwest edge of Warren County, New Jersey. Comprising 23.6 square miles, or 15,104 acres, the municipality is situated in the Appalachian Valley and Ridge physiographic region, sandwiched between the Kittatinny Ridge to the northwest and the Allamuchy Mountains to the south. A small portion at the southern border, comprising the higher elevations of Jenny Jump Mountain, is located in the New Jersey Highlands. Frelinghuysen is bounded on the north by the Paulins Kill and to the south by Jenny Jump Mountain. Interstate Route 80 traverses the southwest corner, State Route 94 cuts across the northeast corner and a railroad easement for the abandoned Lackawanna Cut-Off to the Delaware, Lackawanna and Western railway traverses east-west roughly bisecting the Township. Adjacent municipalities in Warren County are Hardwick, Blairstown, Hope, Independence and Allamuchy. Stillwater, Fredon and Green Townships in Sussex County border Frelinghuysen to the east.

The 2000 Census counted 2,083 persons residing in Frelinghuysen Township, representing a 17% increase since 1990. The Township is mostly a rural, residential community with no public sewer or water service. Johnsonburg and Marksboro are the primary villages of Frelinghuysen with small housing clusters and former hamlets scattered throughout. Johnsonburg is recognized as a historic district on the National Register of Historic Places. More than half of Frelinghuysen's land base, or roughly 70% of current land use represents agriculture, with a total 10,559 acres farm assessed to date. Nearly 20%, or 2,125 acres of that land is managed woodland. Preserved farmland comprises 1,514 acres. In addition to preserved farms, nearly 1,400 acres, or nine percent of Frelinghuysen Township's land base represents permanently preserved parkland owned by the N.J. Department of Environmental Protection, The Nature Conservancy and the Ridge and Valley Conservancy. Vacant, undeveloped land comprises 489 acres.

Frelinghuysen Township has a voter-approved 2-cent Open Space and Farmland Preservation property tax. It enables the Township to generate a local Trust Fund to preserve land and improve recreational facilities. It collects approximately \$53,015 annually with about \$120,000 currently held in reserve. This past fall, the Township adopted the 2005 Frelinghuysen Farmland Preservation Plan as an element to the Master Plan. The Township also has a Right to Farm ordinance and both an active Farmland Preservation Commission and Environmental Commission. Upon completion of this Plan, the Township will have established an Open Space Committee to implement the recommendations presented in this Plan.

This Plan includes an open space inventory that outlines preserved land and potentially preserved land in Frelinghuysen Township, as listed in the Appendix and depicted graphically on the attached Open Space Map. As detailed in the Proposed Greenways and Preservation Corridors section, the attached Greenway Map shows the various preservation areas that evolved in the planning process to meet the Township's goals for maintaining rural character, enhancing recreation opportunities, preserving farmland and highlighting historic resources. This Plan offers a comprehensive Action Plan and Recommendations section to meet stated goals. A primary goal is to adopt this Plan as an element of the Frelinghuysen Master Plan and to submit this Plan to N.J. Green Acres for funding under the Planning Incentive grant program for land preservation.

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THE FOUNDATION: LANDSCAPE & GEOLOGY

"We have broad... limestone valleys with very interesting characteristics – caves; springs that flow with millions of gallons every day; sinkholes; bedrock outcrops that rare plants grow directly upon; disappearing streams... The particular geology and hydrology of the region makes it so worthy of protection."

(Bob Canace, Ridge and Valley Conservancy, Inc. – Interview for WNTI Contours radio magazine; 2/05)

Comprising 23.6 square miles, or 15,104 acres, Frelinghuysen Township is located on the northwestern edge of Warren County. It is shaped roughly like a diamond. Clockwise due north from the tip, it borders Stillwater, Fredon and Green, Allamuchy, Independence, Hope, Blairstown and Hardwick Townships. Stillwater, Green and Fredon represent Sussex County municipalities. Thus bordered by many municipalities, it has long served as a regional crossroads. Frelinghuysen nevertheless managed to preserve its own identity, firmly based on a proud rural heritage and cognizant of its many natural attributes. "Nature seems to have dealt roughly with (Frelinghuysen) in covering its surface with hills and hollows and rocky knobs," wrote Snell in 1881, and indeed the Township offers a varied and often humbling landscape of narrow, country roads and hidden pastures nestled amongst numerous rock outcrops and dense forests that often shelter natural waterways. (*History of Sussex and Warren Counties, 1881; Pg. 684*)

The Paulins Kill forms Frelinghuysen's northern border with Hardwick and contributes to one of its most rural landscapes. As one descends in elevation toward the river, the area becomes significantly more 'wild' and is predominated by dense forests, high escarpments and hidden hollows. Also evident in other parts of the Township, this rugged topography is perhaps most striking along Heller Road, in the southern section of Frelinghuysen, and gives the distinct impression of being a road less traveled. In regards to long views, scenic vistas northwest to the Kittatinny Ridge occur in various spots throughout the Township, but most notably from Lincoln Laurel Road, Silver Lake Road, Kerrs Corner Road and State Park Road. Vistas of large farmsteads and forested tracts are found off Route 94 on both sides of Marksboro, with striking views northwest.

According to the 1989 *Frelinghuysen Township Environmental Resources Inventory (E.R.I.)*, one of Frelinghuysen's most valued characteristics is its ability to surprise visitors with a different natural feature around every corner. "Deep, rich limestone soils; steep, rocky, cavernous limestone outcrops; cool springs and perennial swamps; and rolling, thinly veneered hills of shale are all the product of the Township's unique geologic history... Bedrock geology is important in that it controls where ground water occurs and determines stability of the environment."

Thus presenting terrain coveted by many landscape architects, the Township is so scenic precisely because of the many different land forms that converge giving it an 'edge effect'. People have shown they appreciate natural features, like meadows and forests, more so if they are presented with contrasting views. In Frelinghuysen, change comes suddenly, in that dense forests open up to pastoral fields and every dip and turn may have evocative limestone outcroppings. (*J. Madden, Township Planning Consultant - Tel. communication; 11-17-05*)

Topography varies throughout Frelinghuysen Township, with the greatest slopes found on Jenny Jump Mountain and off Route 519 near Hope. Calculations produced for the 1966 *Frelinghuysen Township Master Plan* revealed the following differential in slope values across the Township:

<u>Degree of Slope</u>	<u>% of Frelinghuysen</u>
➤ > 20 percent slopes =	24%
➤ 10 to 20 percent slopes =	39%
➤ < ten percent slopes =	37% (Pg. 5)

Whether by circumstance or design, much of Frelinghuysen's topography remains uncompromised by road construction, said to be due to the 'sensitivity' of early settlers choosing to bypass and thus preserve natural attributes.

Two highways traverse Frelinghuysen in an east-west direction. Interstate Route 80 crosses at the southwest corner. Although visible in some areas and from an overpass at State Park Road, this corridor offers no direct access to Frelinghuysen, to date. State Route 94 also traverses east-west at the northeastern corner. (*Frelinghuysen E.R.I., 1989; Pgs. 16, 24, 76*)

Five county roadways crisscross Frelinghuysen. Route 519 (Johnsonburg-Hope Road) travels eastward from Hope becoming Dark Moon Road near Johnsonburg to continue into Green, Sussex County. Route 612 (Allamuchy Road) follows a mostly northern route from Allamuchy to end in Johnsonburg center. Route 661 (Ramsey Road) travels south from Route 94 to make a sharp turn west into Johnsonburg where it represents Main Street. Routes 659 (Spring Valley Road) and Route 608 (Silver Lake Road) also serve Frelinghuysen. Routes 519, 608 and Route 612 serve as main commuter corridors toward Interstate Route 80. Route 659 (Spring Valley Road) connects with State Route 94 in Marksboro and serves as a main access route for neighboring Hardwick Township. (*See Open Space Map*)

Local roads branch out from these arteries yet many have remained narrow and winding with sometimes odd and charming names by modern standards like Henfoot, Pippin Hill, Lincoln Laurel and Golden Chain. For the most part, they conform to natural topography and thus have remained distinctly rural. It is these roads less traveled that are addressed in this Plan so that land preservation decisions undertaken in relation to these roadways are made in concert with the over-riding public desire for Frelinghuysen to remain a peaceful, country town.

The Township's foundation is derived from Wisconsin glacial activity. Most of Frelinghuysen is situated in the Appalachian Valley & Ridge Province, a.k.a. the Kittatinny Ridge & Valley region. It is one of four distinct geologic formations in New Jersey encompassing the northwestern tier of Warren County and the northern portion of Sussex County. The landscape is characterized by a parallel succession of ridges running mostly northeast to southwest. Rarely jarring, elevation spans nearly 800 feet from north to south, dipping to 340 feet above sea level along the Paulins Kill and climbing to 1,134 feet above sea level on Jenny Jump Mountain.

A small portion of Frelinghuysen, surrounding Jenny Jump Mountain, belongs to the New Jersey Highlands physiographic region. These land formations are also characterized by a

series of parallel, flat-topped ridges separating shallow valleys of glacial drift. The greater Highlands region stretches from southern New England in a southwest direction to Reading, Pennsylvania. In New Jersey, this 800,000 acre, 1,250 square mile region extends from Mahwah to Phillipsburg.

The 1989 *Frelinghuysen Township E.R.I.* indicates igneous and metamorphic rock material forms Jenny Jump Mountain. These rocks are mostly resistant granites and granite gneisses. Runoff from this material determines the water quality present in the lower environs. It is mostly moderately soft, with moderate pH, low dissolved solids and moderate to high iron and/or manganese levels. Most of the lower valleys are underlain by Paleozoic limestones, siltstones, sandstone and shale. With alternating levels of resistance to erosion, this material has formed the hills and valleys found throughout Frelinghuysen. Kittatinny Limestone, comprising mostly dolomites, and Martinsburg Shale consisting of slate material, represent the two bedrock formations prevalent in Frelinghuysen. The Martinsburg Formation consists of shale from the Precambrian Era and is said to be responsible for the rolling hills, as well as the “moderate to steep slopes, frequent bedrock outcrops, thin soils, and shallow – sometimes marshy - valleys that separate the Pequest and Paulins Kill river valleys. Kittatinny Limestone is responsible for the numerous cave systems found throughout Frelinghuysen. (Pgs. 16-27)

Richard F. Dalton, a senior geologist with the New Jersey Department of Environmental Protection (N.J. DEP), published *Caves of New Jersey* in 1976. In Frelinghuysen, this book documents the following systems in and around Johnsonburg:

<u>NAME</u>	<u>LOCATION & CHARACTERISTICS</u>
Betsy Cave	1 mi. south of Johnsonburg . Small cave / Elper Formation
Devil’s Kitchen #1	Erie-Lackawanna railbed off Silver Lake - 130 ft. branchwork / cave coral, flowstone & a column
Devil’s Kitchen #2	Erie-Lackawanna railbed off Lanning - 40ft. x 30 ft. 2 nd room accessed via crawlspace. Highly fractured Elper Paleo-solution breccia. Evidence of Indian habitation
Devil’s Wheelwright Shop	Erie-Lackawanna railbed. Fissure passage – 60 ft. long
Indian Hollow Rock Shelter	½ mi. west of Johnsonburg, 10ft. x 7 ft. x 8 ft. high. Several low passages / shallow pits. Elper Formation
Railroad Cut Cave	Erie-Lackawanna railbed. Two entrances. 50 ft. long. Elper Formation /bacon-rind” draperies. Destroyed by vandalism in 1954.
Stevens Camp Cave	Johnsonburg Presbyterian Camp. 10 ft. drop into a small room / Allentown Dolomite
Yellow Frame Caves	Surrounding Mud Pond. Largest of about six (6) caves Several passages / some stalactites. Fluted flowstone
“Johnsonburg Cave” (Unexplored in 1976)	½ mile west of Johnsonburg /north of Route 519. Elper Formation.

A map of Frelinghuysen's karst features was recently generated by Geoscience Services of Bernardsville for the Ridge and Valley Conservancy, Inc., a nonprofit group dedicated to preserving land in this region. It indicates that shallow ponds with rock pinnacles as well as Paleozoic dolomites and limestones are highly prevalent south of Kerrs Corner Road with significant formations around Bear Pond and another found in the northwest corner adjacent to the Paulins Kill.

Limestone and dolomite material is known to exhibit a high secondary porosity, wherein water travels through fissures and cracks directly to ground water systems. Primary porosity allows water filtration through soil. While contributing to the Township's abundant water resources, this limestone material has proven unstable in that the avenues for porosity widen over time. Sinkholes exist throughout this region, with a large depression indicated west of State Park Road and several off South Street.

NATURAL FEATURES

“As one of the few remaining regions of New Jersey which still preserves a measure of ecological health and diversity, we are in a privileged position to learn from the tragic consequences of unregulated growth. We have the opportunity to evolve as a region which guides its social, economic and political patterns by principles in harmony with our natural resources.”

(Sr. Miriam MacGillis, Genesis Farms - quoted in Frelinghuysen Township E.R.I., 1989; Pg. 1)

Water Resources



Frelinghuysen is located within the Upper Delaware River watershed. Its entire northern border is formed by the Paulins Kill (shown here, view northeast from Stone Bridge Road). According to a recent analysis conducted by the Warren County Planning Department, the Paulins Kill riparian corridor runs 5.3 miles or nearly 27,800 linear feet along Frelinghuysen’s northern border. *(See attached Natural Features Map)*

The Upper Delaware River Watershed encompasses the Township whereby all unimpeded rain falling in Frelinghuysen will eventually find its way into the Delaware River. The 1998 Warren County Environmental Resources Inventory (E.R.I.) depicts Frelinghuysen’s aquifers and sub-watersheds as comprising the Paulins Kill Watershed, Beaver Brook Watershed, Bear Creek Watershed and a portion of the Pequest Watershed. These watersheds include drainage from the Pequest River and Paulins Kill and major tributaries such as Bear Creek, Beaver Brook and Trout Brook. Bear Brook, a tributary to Bear Creek and thence the Pequest River, is classified as a Category One waterway. *(See attached Natural Features Map)*

Northern Warren County exhibits glacial deposits from the most recent Ice Age, or Wisconsin glaciation period, that are deep enough to support natural aquifers. Two of these valleys are found in Frelinghuysen in the Paulins Kill valley and Pequest River valley. Filled with silt, clay and sand and gravel deposits that trapped water melting from the glaciers, they represent highly productive aquifers. *(Warren County E.R.I., 1998; Pg 29 & associated map)*

According to the 2005 Township Stormwater Management Plan, Frelinghuysen Township has five major hydrologic units (HUC 14’s), namely Paulins Kill; Bear Creek; Bear Creek - Sussex / Warren County; Beaver Brook - above Hope Village; and, Beaver Brook - Union Church tributary. *(Pg. 14)* Wasigan Lake, French Lake, Mud Pond and Luse Pond are the largest of the many natural water bodies that grace Frelinghuysen.

A high number of natural springs and sinkholes can be found throughout the Township. This relatively pristine hydrogeology and its inherent fragility and susceptibility to pollution make preservation of the natural environment a top priority in land use planning.

“The only supply of (drinking) water for Frelinghuysen Township is ground water... For this reason, the geologic formation in which Frelinghuysen lies becomes an important determinant of future water resource capabilities.” (*Frelinghuysen Township Master Plan Report, 1966; Pg. 20*) For this reason, water quality has always been of utmost importance to Township residents. The 2005 Frelinghuysen *Stormwater Management Plan* details efforts made to date to monitor streams, quantify stream pollutants, establish stream hydraulic capacity and degree of impervious cover as it relates to ground water recharge.

The N.J. DEP has established Ambient Biomonitoring Network (AMNET) stations throughout the State to study the integrity of waterways. Frelinghuysen has one AMNET station at the stream crossing Dark Moon Road. Testing during the second round of this ongoing study indicated moderate impairment. Impairment can result from upstream development causing increased pollutant runoff, erosion and water temperature. Pollutants may include metals, suspended solids, hydrocarbons, pathogens and nutrients. Three other AMNET stations located just off the municipal border to study the Paulins Kill and Pequest Rivers showed no impairment at first. The second round of testing, however, showed the site off Shades of Death Road, in Allamuchy, had moderate impairment. Chemical analysis of water samples from the Paulins Kill indicated stream temperatures in excess of State criteria. (Pgs. 2-4)

Ground water recharge rates for Frelinghuysen Township were recently provided by the Ridge and Valley Conservancy in the form of a map. This map indicates that most of the Township has a ground water recharge rate of 13 to 15 inches annually, with pockets exhibiting as high as 22 inches on both the eastern and western corners of the Township at the southern border. The area north of Route 519 has a significant annual recharge rate of 10 to 12 inches.

Forests

“In addition to being psychologically and economically essential to humans, plants have a great aesthetic value, improve man’s environment and contribute to his mental health. People, to escape from the many stresses of life today, seek the change of pace that woodlands, lakes and gardens offer.”
(*Frelinghuysen E.R.I., 1989; Pgs. 44-45*)

Vegetative cover is vital for preventing soil erosion, buffering dissimilar land uses and noise, cleaning the air, providing food and shelter for wildlife and preserving water quality. The last 300 years of European settlement in Frelinghuysen, however, has changed the character of natural ecosystems by altering the landscape to serve human needs. Prior to that, the Native Americans would periodically burn tracts to drive game and also attract wildlife that preferred open land. However, the settlers accelerated land disturbance in pursuit of livelihoods derived from farming, timber harvesting and/or extractive industries. Finally, the 21st Century has brought change from increased development and the consequential fragmentation of landscape.

As part of the Ridge and Valley physiographic region, containing the highest elevations statewide, Frelinghuysen Township’s uplands exhibit mostly mixed-oak forests with maples, tulip poplars, hickories and dogwoods in the understory. Most cleared over time, the limestone valleys predominantly present sugar maples and mixed hardwoods like birch, ash, beech and basswood. Here, understory plants include viburnum, sassafras, and spicebush. (*Frelinghuysen E.R.I., 1989; Pgs. 43, 50-51*)

Frelinghuysen is located in a temperate climate wherein a natural forest in the initial stages of tree growth, or pioneer forest, will exhibit mostly cedars and birch trees. Following a middle stage, these climax forests will develop with conifers and oaks. A climax forest is one that has reached a point where it is self-perpetuating. The tree canopy is thick and shades out competitive understory growth. A few isolated forest tracts remain in Frelinghuysen where human disturbance ceased and the land reverted to natural succession. Climax forests are said to exist along South Town Road, at the Presbyterian Camp, at Jenny Jump State Forest and near Mud Pond. The 1989 *Frelinghuysen Township E.R.I.* calls on preserving these forests “because of their rarity and beauty.” (Pg. 43)

It further lists the following plant communities as characteristic of those naturally found in Frelinghuysen and follow-up investigations for this Plan have verified their continued existence:

- Johnsonburg Swamp Preserve around Mud Pond – northern hardwood forest
- Between Lincoln Laurel and Route 94 – Upland Forests on Shale
- Bear Creek at Bear Creek Road – Typical swamp wetlands with predominantly red maples
- Jenny Jump State Forest – Upland conifers and hardwoods, mountain laurel on northwest facing slopes
- Paulinskill riparian corridor – Typical lowland and palustrine forests exhibiting sycamores, red maples, tulip poplars and black birch. (*Frelinghuysen E.R.I.*, 1989; Pg. 58)

A clear depiction of the amount of forest cover present in Frelinghuysen can be seen on the attached *Land Use Map*. It shows large swaths of forest cover throughout the Township but particularly prevalent around Mud Pond, off State Park Road, and in the Paulins Kill valley.

Soils

“Soil is the product of a living environment and a vital factor in the productivity and sustainability of any region”
(*Frelinghuysen E.R.I.*, 1989; Pg. 28)

The ridges and valleys exhibit vastly different soil structures. On ridge tops, the soil in Frelinghuysen is thin and tends to be “poor, acidic, often stony” and thus not conducive to plant growth, however, the valleys over time have collected deep glacial deposits of shale and limestone presenting fertile soil that no doubt gave Frelinghuysen its reputation as an agricultural community. (*Frelinghuysen E.R.I.*, 1989; Pg. 50)

According to the Township 2005 *Farmland Preservation Plan* , Frelinghuysen Township exhibits soil structures that contribute to farm productivity in the following relative amounts:

Prime Farmland Soils	=	20%
Soils of Statewide Significance	=	12%
Unique Soils	=	3%
Prime Farmland Soils if Drained	=	6%

Specifically, the Township was found to have 16 types of New Jersey prime farmland soils. Prime farmland soils demonstrate high productivity and stability, no doubt responsible for Frelinghuysen's origin as an agrarian community. The most abundant farmland soils are Bath, Hazen, Bartley loam, and Wassaic gravelly loam. Six percent of Frelinghuysen is composed of Wassaic-Rocky outcrop complex, which has the potential to be prime farmland soil if drained properly. Farmland soils of statewide importance require more management. Bath soils were found to be most abundant in this complex. Adrian and Carlisle muck are two farmland soils of unique importance for growing specialty crops and 16 different wetland soils, or hydric soils, were found in Frelinghuysen. (Pgs. 4-5)

The 1989 *Frelinghuysen Township E.R.I.* provides an in-depth view of the various soil classes found in Frelinghuysen Township, including their drainage patterns, susceptibility to erosion and depth to bedrock. All these factors call for land use decisions that maximize productivity, preserve the natural landscape and minimize hazards such as flooding, where possible. The following outline was derived from this text and indicates which soils have been found in various areas of the Township and their general characteristics. (Pgs. 28-39)

- ❖ Soils developed on glacial outwash or alluvium – (Hazen, Hero and Fredon soils)

Characteristics and occurrences:

Terraces adjacent to streams and deep valleys;
 Deep, nearly level to strongly sloping to very steep slopes;
 Loams, fine sandy loams, gravelly loams or cobbly loams.

Distribution:

- Hazen soils found throughout southern part of town near Trout Brook, Bear Creek and other tributaries. Slopes up to 25%
- Hazen loam & gravelly loam - Paulinskill River Valley between Marksboro and Stillwater
- Hero soils found on other stream terraces - Slopes up to 8%.
- Fredon soils found along the Allamuchy border on stream terraces and in depressions plus isolated spots at Mud Pond - Deep, poorly drained soils. Slopes up to 3 %.

- ❖ Organic deposits and alluvium – (Carlisle, Adrian, Wayland and Middlebury) deep yet very poorly drained. Subject to frequent flooding.

Characteristics and occurrences:

On floodplains and depressions in valleys;
 Deep, nearly level;
 Surface layer ranges from muck to silt loam

Distribution:

- Adrian muck only at Bear Creek floodplain;
- Carlisle muck found in western half and scattered floodplains throughout the Township

- ❖ Soils formed in glacial till and material from weathered bedrock (Annandale, Bath, Washington, Parker, Wassaic, Nassau, Edneyville, Bartley, Chippewa, Lyons and Venango)

Characteristics and occurrences:

Stony soils and rock outcrops common;
 Developed on shallow to deep tills;

Composition may differ, e.g. shale, slate, limestone, granite rocks or other may dominate

- ❖ Hydric soils generally associated with wetlands (Adrian, Carlisle, Chippewa, Halsey, Lyons, Fredon, Wayland and Venango.

Characteristics and occurrences:

Highly saturated, flooding frequently.

Distribution:

- Scattered throughout Township, including large areas along Bear Creek and Trout Brook (*Frelinghuysen E.R.I. Pgs. 31-34*)
- Hydric soils and wetlands are prevalent along Bear Creek and in the vicinity of Glovers Pond. Our analysis also shows wetlands in the vicinity of Bear Creek, with other large areas associated with Mud Pond and Beaver Brook. (*See attached Natural Features Map*)

Farmland

“There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace.”

(A Sand County Almanac, Leopold, Aldo, 1949; Pg. 6)



Farming has long held a place of reverence in Frelinghuysen. It set the stage for the development of Frelinghuysen’s rural landscape and still holds precedence in land use decisions. Local geology featuring fertile agricultural soils and gentle topography made Frelinghuysen not only an important social center by virtue of its location but also because farmers found it easy and profitable to conduct their various livelihoods.

According to the 2005 Township *Farmland Preservation Plan*, Frelinghuysen was once said to have “more cows than people.” Indeed, its dairy operations were quite extensive with 47 dairy farms and three creameries in operation during the 1960’s. Yet, dairy operations in Frelinghuysen have suffered the same fate as others statewide, namely rising fuel costs and low milk prices. By the 1970’s, suburban development consumed many former farms and

Frelinghuysen began changing from a farming community to a bedroom community. Very few dairy farms remain and most farmers raise corn and hay. Several now raise sheep, goats and beef cattle (Shown above, off Route 519 East). There are two chicken and egg farms, as well as honey and maple sugar producers.

The 1990’s has seen yet another shift from traditional farming to specialty products such as Silverlake Farms on Silver Lake Road which has greenhouses and a farm stand, nearby Genesis Farm which operates member-supported organic gardens and Van Grouw Farm off Ackerson Road which sells greenhouse items to the wholesale market. Valley Falls Farm off Route 661 (Ramsey Road) specializes in organic garlic and several property owners are involved in breeding llamas and alpacas. Horse breeding and boarding takes place on several

properties in town and have proved essential buyers for farmers growing hay and straw. (Pgs. 6-8)

Further data expressed in Frelinghuysen's 2005 *Farmland Preservation Plan* shows there are currently 387 farms in the Township. Municipal tax records show 10,559 acres are currently farm assessed, thus 70% of the Township's land base is farm assessed (*See attached Property Tax Lists*) with 20% of that land, or 2,125 acres representing woodland management.

Mirroring statewide farm trends, Warren County is experiencing a transition from large farms to smaller operations. In 2002, there were 814 farms countywide, whereas there were only 802 in 1997. Yet this 1% increase in the number of active farms actually masks a decrease in land devoted to farming as well as the average farm size and market value of farm products. Between 1997 and 2002, Warren County lost 6,500 acres, or eight percent of farmland. In Frelinghuysen, the average farm comprises 32 acres. (Pgs. 8, 9)

The 2005 *Frelinghuysen Farmland Preservation Plan* has proposed the following six project areas designed to guide Frelinghuysen's Farmland Preservation efforts.

- Allamuchy Farmland Belt
- Limestone Valley - Bear Brook and Trout Brook
- Martinsburg Ridge
- Paulins Kill Valley
- Johnsonburg District
- Hope Preservation Area

Morris Land Conservancy developed this Plan in concert with the goals and expertise provided by the Township Farmland Preservation Commission. The Plan offers insight into properties that may welcome farmland preservation efforts and their agricultural suitability.

In 1999, voters approved establishment of a Farmland Preservation Trust Fund with a tax levy set at \$.01 cents per one-hundred dollars of assessed property value. In 2003, they went to the polls again and agreed the "penny-tax" should be increased to \$.02 per hundred dollars of assessed value. Until recently, the Fund was exclusively dedicated to land acquisition for farmland preservation. In November, 2005, voters were asked again to weigh in on a proposal to expand the Trust Fund to include funding for open space acquisition and the maintenance of lands set aside for recreation or conservation. Residents once again overwhelmingly supported the referendum. Thus, this expansion will allow Frelinghuysen to pursue land acquisition for open space and recreation in addition to farmland preservation.

Wildlife

"The message is clear that diversity of habitat is the life blood of the majority of species and the ramifications extend from subsistence of an individual to the viability of a population and to the survival of species."

(Leopold, Aldo (1933) - quoted in *Readings in Wildlife Conservation*, 1974; Pg. 39)

Frelinghuysen is home to a vast array of wildlife species that like humans have long valued its abundant resources. It is not uncommon to experience bear sightings. Also common

in northwest New Jersey and often seen in Frelinghuysen are coyotes, gray and red foxes, raccoons, opossums, skunks, and beavers, plus plenty of wild turkeys, raptors and white-tailed deer. (*Personal observations & Frelinghuysen E.R.I., 1989*) According to the 1998 *Warren County E.R.I.*, a giant swath, representing roughly half of Frelinghuysen, lies in a major northwest to southeast waterfowl flyway. This flyway is vital for the survival of migratory birds including geese and ducks in that it offers many waterways for them to rest and feed as they travel south from Canada each year. Bald eagles, hawks and other raptors as well as small passerines like gold finches follow a northeast to southwest route along a corridor that includes Jenny Jump Mountain. (*Pg. 92-93 & associated map*)

The 1989 *Frelinghuysen Township E.R.I.* offers a detailed listing of wildlife that is commonly seen or endemic to Frelinghuysen, as well as whether they are endangered and/or threatened. Rangers from Wildlife Preserves, a private land conservation organization, manage and monitor their wilderness area, known as the Johnsonburg Preserve, located off Ramsey Road. The rangers have reported finding Bog turtles on this site. Long-tailed Salamanders are said to be very common in the Township, preferring cave entrances, springs, brooks and floodplains. (*Pgs. 59-62*) The endangered Indiana Bat may inhabit or reside near the various tunnels built in Frelinghuysen to allow passage underneath the Lackawanna Cut-Off. (*N.J. DEP, Division of Fish, Game & Wildlife - Tel. conversation,; 1998*)

The attached *Natural Features Map* shows the following Natural Heritage Priority Sites designated by N.J. DEP in Frelinghuysen Township:

- Johnsonburg
- Glovers Pond
- Luse Pond
- Southtown Sinkhole

The N.J. DEP website listing rare species and natural communities found in Warren County indicates the following threatened and endangered species, in addition to numerous fragile sedges, ferns and wildflowers:

Cooper's Hawk
Grasshopper Sparrow
Upland Sandpiper
American Bittern
Red-Shouldered Hawk
Wood Turtle
Bog Turtle
Timber Rattlesnake
Bobolink
Longtail Salamander
Bald Eagle
Bobcat
Red-Headed Woodpecker
Savannah Sparrow
Pied-Billed Grebe
Vesper Sparrow
Barred Owl

Dawrf Wedgemussel
Mitchell's Satyr (butterfly)
Large Water Plantain
Puttyroot
Dwarf Mistletoe
Rock Sandwort
Lake Watercress

Fishing & Hunting

Fishing and hunting are long-standing traditional activities that received unanimous support at Frelinghuysen's October 26th Public Hearing as goals for this Open Space and Recreation Plan. The Paulins Kill corridor provides many popular fishing spots in Frelinghuysen, especially since easy access is provided via the Paulinskill Valley Trail. In his memoir, *Memories of a Lifetime*, Frelinghuysen Mayor Emeritus Charles Rydell, wrote about often fishing near Marksboro and relates one 'fish tale' of catching a 21 inch trout at the dam when he was a boy. Rather than paying to have it mounted, his family enjoyed a "great", well-earned meal. (Pgs. 57-58)

A sports shop exists at the intersection of Route 94 and Silver Lake Road, providing licenses and necessary equipment. For many years, the Double N Pheasant Farm off Mott Road has raised fowl on-site for sportsmen.

In addition to various local hunting groups that at one time or another existed in town, including one formed for a time by the Rydell family, the Johnsonburg Gun Club currently has about 35 members and operates a small clubhouse off South Town Road. According to one of the founders of the club, Angelo Leoncini, it was started 55 years ago for deer and small game hunting, as well as small birds.

Having title only to about three acres themselves, these hunters depend on many private landowners in the area for access, including at the Johnsonburg Presbyterian Conference Center off Route 519. This year, the group shot about nine bucks, although Mr. Leoncini said far more females than males have been shot. (*Tel. Communication; 12/05*)

CULTURAL HISTORY OF FRELINGHUYSEN TOWNSHIP

“Frelinghuysen hasn’t seen the development pressures that many other municipalities have seen. It’s a little off the beaten path...It’s a blessing for Frelinghuysen.”

*(Dwayne Copley, District Manager, Warren County Soil Conservation District -
Personal Communication; Sept. 7, 2005)*

Frelinghuysen Township was founded on March 9, 1848 when it was separated from Hardwick Township. It was named after Theodore Frelinghuysen, a national politician who had gained prominence and respect as an educator and statesman. The Township retains a diverse array of historic structures including centuries-old stone houses, bridges, barns, limekilns and Indian caves that offer an intriguing glimpse into its beginnings.

Early Settlement

Long before incorporation, its abundant natural resources and shelter made the region encompassing Frelinghuysen Township an ideal home for native peoples. Their habitations date back nearly 12,000 years, as archaeological evidence points to the fact that these first human inhabitants found the region replete with flora and fauna.

Early settlements date back to about 1200 B.C., during the Late Woodland period when Native Americans began experiencing domesticity and agrarian pursuits. First known simply as “Land of the Lenape,” or Lenapehoking, the area surrounding modern-day Frelinghuysen was populated by the Munsee Lenapes, or “people of the stony country.” Lacking organizational structure, the Lenapes often fell victim to raids by more aggressive northern tribes and died off from disease and social upheaval brought by European colonists who began exploring the area around 1600. (*Frelinghuysen E.R.L.*, 1989; Pg. 69)

According to the 1966 *Road Map of Warren County*, depicting countywide “Prehistoric Sites”, the Natyzak Farm off Route 661 (Ramsey Road) is where Native American artifacts were located. However, an earlier map entitled *Indian Habitations in Warren and Sussex Counties*, prepared by Max Schrabisch, in 1929, shows that more than 30 early Indian camp sites were scattered throughout the Township and at least four rock shelters existed primarily south of Kerrs Corner and Dark Moon (Route 519) Roads. Native artifacts have been found along the many natural springs and waterways throughout the Township and on southern slopes as Indian campsites would have had to be shielded from northwest winds. (*D. Natyzak-Osadca, Personal Communication*; 1-19-06)

Frelinghuysen Mayor Emeritus Charles Rydell, (shown here at his book signing, 11-13-05) who at age 90, recently published *Memories of a Lifetime*, a compilation of his news stories about local town people, places and events. In it, he attests to finding signs of Indian habitation when



plowing the field. Many arrowheads and cooking implements have been found over the years and he owns a unique and very razor sharp, 4-inch granite spear point found in his cornfield. "One can see how a long ago Native American hunter used it when attached to a long lightweight wood shaft or pole (to) easily and accurately spear and catch a fish or other water loving animal..." (Pgs. 10-12) Correctly surmised by the abundance of local artifacts, Frelinghuysen was indeed once home to robust Native American communities. However, these indigenous people could not forestall the European land rush.

Johnsonburg's Pioneer Days

The Dutch were the first European inhabitants of Warren and Sussex, having established farming communities and trade routes early on all along the Delaware River. It was English surveyors, however, who literally put the area on the map, as they plotted land for the West Jersey proprietors, absentee landowners residing abroad. Early settlers were mostly tenant farmers of English Quaker, Scotch-Irish, and German extraction. (Warren County Cultural Resources Survey, 1991; Pg. II-6)

While surveying the famed Minisink Path that ran from the Atlantic Ocean to the Delaware River, a small band of surveyors led by Samuel Green set their sights on Pahuckqupath, as Johnsonburg was first called, in 1715. They were stopped at present-day Marksboro when the natives refused them passage across the Paulins Kill. (Frelinghuysen E.R.I., 1989.; Pg. 69) Indians abandoned the area, though, around 1742.

Indeed, Samuel Green's explorations led to the early settlement of Warren and Sussex counties but he is said to have chosen the best land for himself. (Warren County Chronicles: Byways, Backroads and Boondocks...., 1996; Pgs. 11-13) Green settled in Johnsonburg around 1725, and counted as his neighbors, the Armstrong, Pettit, Cook, Kennedy, Mott, Dyer and Thompson families, among others.

Frelinghuysen was first encompassed by Hardwick, a much larger territory that once comprised all of Independence, Allamuchy, Green, Stillwater and portions of Hackettstown. Johnsonburg was perfectly situated at a major crossroads for the region then designated as Sussex County. Representing exhaustive historical research, James P. Snell published a History of Sussex and Warren Counties in 1881. This reference has proved invaluable to historians for more than a century. Snell describes how founding fathers were ordered by the King of England to build a courthouse and jail in each new county, resulting in the designation of Johnsonburg for said purpose.

The community that developed enjoyed a brief distinction, albeit some notoriety, as the Sussex County seat of government with court sessions held in the log home of Jonathan Pettit in the mid 1750's. Justice and county business at that time dealt primarily with debtors, petty crimes and issuing tavern licenses; the first in the county going to Pettit.

The oldest house in Frelinghuysen is said to be Samuel Green's residence. It was built around 1740 on the present-day Natyzak Farm off Route 661 (Ramsey Road.) (D. Natyzak-Osadca - e-mail; 11-15-05). The first meeting of the Sussex County freeholders took place there in 1754. That same year, a log jail was built on land provided by Samuel Green near Pettit's Tavern, but

construction was accomplished rather quickly and cheaply resulting in frequent prisoner escapes. The name Logg Gaol, literally meaning log jail, was ascribed to the pioneer village and it became a major stagecoach stop for the region. Dating back to 1753, a stone mile-marker inscribed with the distance to Logg Gaol has been preserved and sits protected by a short iron fence adjacent to Route 612 (Allamuchy Road). "Travelers going from Albany to Philadelphia, or (New York) to Stroudsburg found a temporary oasis in the village..." (*Your Guide to Historic Frelinghuysen Township; 1974*)

Closed and long neglected, the Johnsonburg Hotel facing Allamuchy Road at the intersection with Main Street commands a site with a long history. Following the need to use Pettit's Tavern for more and more court business, a second log hostelry was built nearby by John Green. Today known as the Johnsonburg Hotel, it started out as Woolverton's Tavern and then Joseph S. Durling's Hotel. The property was structurally remodeled and changed hands many times, yet has survived, albeit dilapidated, as a distinctive relic of Johnsonburg's hey-day.

Less than two miles east from the jail, toward Green Township, developed the neighborhood of Dark Moon Tavern off Route 519 (Dark Moon Road.) It centered around a hostelry sporting a sign with a black moon on a white background. The tavern was known to predate the Revolution and had the reputation of attracting nefarious gamblers and sometimes murderous characters. A small, rocky hill on the south side of Johnsonburg is known as Mount Rascal, having served in early days as a "resort for card players and sports." (*Historical Sites of Warren County, 1965; Pg. 45, 51*) The area has since reverted to residential use.

One of five cemeteries described by Snell was the Dark Moon Cemetery, a.k.a. the Dyer Burial Ground or Hardwick Cemetery. It contains what was purported to be the oldest headstone found in 1881, belonging to Anne Reeder who died in 1769 at 25 years of age. Disintegrated even in 1881, the cemetery is today privately owned and barely a memory. It is located off an unimproved, private lane off Route 519 (Dark Moon Road). (*Pgs. 684-694*)

The four other large cemeteries are owned and maintained by church organizations. The Johnsonburg Christian Cemetery is located on Allamuchy Road; the Johnsonburg Methodist Cemetery is off Route 519 (Dark Moon Road); the Marksboro Presbyterian Cemetery is behind the church in the middle of the village; and, the Yellow Frame Cemetery is at the eastern edge of town on the Fredon border. All have private ownership, thus assumed oversight. The Yellow Frame graveyard is notable in that it is situated across from its parent church and parsonage, located in Sussex County. It is said to have the remains of 22 Revolutionary War soldiers. (*Historical Sites of Warren County, 1965; Pgs.46, 47*)

Family graveyards were no doubt established as needed on farmsteads throughout Frelinghuysen. Samuel Green is said to be buried among about 14 graves on the Natyzak Farm off Route 661 (Ramsey Road). (*D. Natyzak-Osadca - Communication; 1-19-06*)

As mentioned, Pettit's Tavern also served as the county courthouse, but soon proved too small. The jail was costly to operate since much of the budget went toward chasing down escapees. Around 1761, Sussex County government and all court services were relocated to New Town, now called Newton, in Sussex County.

Nevertheless, the community thrived. Possibly one of the oldest surviving religious structures in Warren County, the Mission House, circa 1780, is located off Route 661 (Main Street) in Johnsonburg. This impressive stone structure turned residence was built as a Protestant Episcopal Church and designed to square off with the four directional points of the compass.

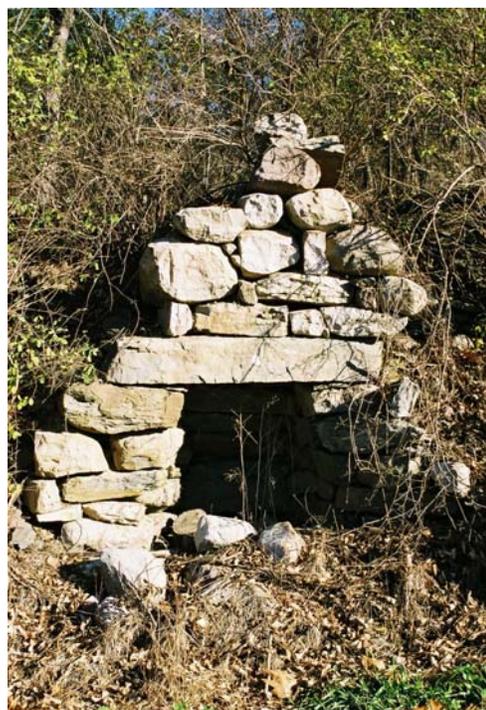
Joseph Thomas, a charismatic preacher from Ohio known as the “White Pilgrim” for his entirely white attire and horse, visited Johnsonburg in 1835. Thomas’ flamboyant appearance in town was short-lived, though, because he died of smallpox within days of his one and only service. His final resting place is marked by a tall white marble pillar in the middle of the Johnsonburg Christian Cemetery off Allamuchy Road.

Another colorful character from around that time was the “The Old Pig Drover.” Every two months or so, this animated and earthy character would visit the Johnsonburg hostelrys, accompanied by a herd of pigs on their way to farm markets. He regaled villagers with stories but kept his identity a secret. Of course, curiosity flourished until late in his life it was discovered he was Samuel Fulton, a Tennessee businessman who had lost his fortune after the War of 1812 and suffered a breakdown. Thanks to the efforts of kind-hearted souls from Johnsonburg, he was eventually reunited with family and friends. (*History of Sussex and Warren Counties, 1881; Pgs. 686-687*)

Around 1814, Logg Gaol was renamed Johnsonburg to honor Jonathan Johnson, a store owner and local postmaster. In 1824, it became part of newly established Warren County, answering to a new county government in Belvidere. Statistics from the 1850 U.S. Census, depicted on the *Map of Warren County* from that period, place the population of Frelinghuysen at 1,271 with 219 dwellings, 106 horses and 347 cows counted. By then, there were also four churches in Frelinghuysen. An octagonal stone house was built off Dark Moon Road, just past the Methodist Cemetery, known simply as the “eight-square house.” It is one of only two still standing in Warren County and is an intriguing example of 19th Century ingenuity.

Growth & Development

Farming generated supportive industries as feed and seed were needed to survive. Sawmills sprouted up in many locales and provided the resource for early log dwellings and structures. Most hidden from sight, limekilns can be found on almost every farm property in Frelinghuysen and sometimes along main connector roads. (*Mott Road Limekiln shown here*). Limekilns were used by early farmers to burn limestone to create lime which would “sweeten” the soil by raising the pH level and making it more basic.



In 1748, Nathan Armstrong built a grist mill to capitalize on the abundant fresh water from Federal Springs in Johnsonburg that “was of vital importance to the survival of the village.” Later called Lolas Grist Mill, it stood idle yet remarkably intact through to the present day where the current owner still maintains the wooden grist mill and surrounding property, thereby providing a timeless image of Frelinghuysen’s industrious past. (*Warren County Municipal & Charitable Conservancy Trust Fund application, 2001; Pg. 5*)

Marksboro

Having been dissuaded by Native Americans in the early to mid 18th Century from crossing the river, other pioneers chose to settle instead on the south side of the Paulins Kill. Thus, Marksboro developed at the northern border and was first named Mark’s Borough after Colonel Mark Thomson, a local landowner and man of distinction. Around 1760, he built a feed mill that was in use up until the 1970’s. Painstakingly and authentically maintained, the structure is now a private residence with an intriguing, large painted feed sign on the stone façade.

In 1773, Mark Thomson took control of the Changewater Forge in Hunterdon County and remained there until his death in 1803. In the intervening years, however, he was a member of the Sussex County legislature until 1775 and served as a county judge at the onset of the Revolutionary War. He was on the Governor’s Council in the late 1780’s and a member of Congress from 1795 to 1799. (*Pohatcong, The Prologue...., 1981; Pgs. 41-42*)

His home in Marksboro still stands. Located at a sharp curve of Route 659 (Spring Valley Road) and high on a hill overlooking the mill and river, this handsome white, two-story frame structure has an older section dating back to 1780. It was possibly built by his family as at that time he was engaged in the War and Changewater iron operations. It is considered “one of the finest examples of Georgian architecture in the county” and is one of the few “elite manor houses” left standing. (*Warren County Cultural Resources Survey, 1991; Appendix C*) A small “fort-like structure” on the property has ‘musket slots’ in it’s facade attributed to early settlers who used them to fire down upon warring Indian tribes crossing the Paulins Kill to attack Marksboro. (*Memories..., 2005; Pg. 39*) During the Civil War, the property may have served as a stop on the legendary Underground Railroad to hide escaped slaves as they fled further North. (*Historical Sites of Warren County, 1965; Pg. 46*)

Marksboro developed slowly up until about 1881 when a railroad line along the Paulinskill was constructed. Snell wrote there were then about 150 residents warranting two mail deliveries per day and patronizing the Marksboro Hotel, stores, blacksmiths, Thompson’s grist mill and the Presbyterian Church. (*Pg. 688*) The Marksboro Hotel burned down around 1940 leaving behind only a retaining wall and set of stone stairs leading to what must have been a commanding view of the county northwestward toward the Delaware Gap. Built as the Van Horn and Lanning store, an old stone structure at the corner of Route 659 (Spring Valley Road) and Route 94 may be one of the oldest buildings in Frelinghuysen. (*Warren County Cultural Resources Survey, 1991; Appendix C*)

“I honestly believe that almost every home and/or building in Marksboro is (at) the very least over 150 years old. I can think of only two new homes being built (there) during the past

80 years.... when I came to live here on our farm," wrote Rydell in his recent memoir which offers a 'house-to-house' historical narrative about Frelinghuysen, including humorous stories of spending his boyhood fishing and skinny dipping in the Paulins Kill. (*Memories...*, 2005; Pgs. 49-71)

Bending Brook Industrial District & The Environs

West of Johnsonburg, the Bending Brook region straddled another important transportation corridor as the neighboring Moravian village of Hope served vital hospital services during the Revolution. Several water powered structures were located in Bending Brook, including a distillery and sawmill. Today, numerous striking Revolutionary structures remain along this route. The G. Lanning House, located at the intersection of Lanning Road and Route 519, was one of more than 15 present by 1800 due to industry and has a datestone marked 1702, although its authenticity needs corroboration. (*D. Natyzak-Osadca - e-mail; 11/05*)

Other early communities included Paulina, Shiloh, Southtown, Ebenezer and Kerrs Corner. The hamlet of Paulina, nestled along the Paulins Kill, at the northwest corner of the Township, was considered the "pride of the Paulins Kill Valley" long before Snell wrote. (*History of Sussex & Warren...., 1881; Pg. 689*) Today, however, Paulina has none of the commerce or institutions it once had and was absorbed by neighboring Blairstown.

Shiloh developed around a grist mill off State Park Road. There was also a saw mill at Glover's Pond built before 1775. (*History of Sussex & Warren.... 1881; Pg. 694*) The A. Cool Farmstead on Route 519 (Hope-Johnsonburg Road) has an English barn dated 1798 made of the same stone as the house and represents "one of the few English barns to survive" in Warren County. (*Warren County Cultural Resources Survey, 1991; Appendix C*) Mining for hematite took place on Jenny Jump Mountain and many of the miners resided in Frelinghuysen.

As in the case of Shiloh, only a few foundations scattered throughout the forest remain as evidence of the once busy community of Howard. The cluster of homes and the Dark Moon Restaurant at the intersection of State Park Road and Route 519 mark where Southtown once formed around a saw mill, grist mill and school. Many foundations remain to attest to its establishment as a mining workers' village. (*Historical Sites of Warren County, 1965; Pg. 52*)

The Locke Family Homestead, located at the corner of Kerrs Corner and Silver Lake Roads, offer a pastoral image of Frelinghuysen's enduring agricultural heritage. It was built in the late 1700's by Revolutionary War Captain Locke and is further noted for its dairy barn which "retains both its formal integrity and integrity of materials and workmanship." The J. Kerr house in this vicinity still stands and has on the premises, a large and distinctive buttonball tree from that era. Midway between Hope and Marksboro, the community of Ebenezer developed around the Ebenezer Methodist Church and Ebenezer School, now both residences. For a time, the area was known for the Camp Wasigan girls camp and overlooks man-made Wasigan Lake. (*Warren County Cultural Resources Survey, 1991; Appendix C, Pg. III-5, IV -23*)

Early Schoolhouses

As early as 1765, Frelinghuysen was served by a schoolhouse near Federal Springs, in the settlement that became Johnsonburg. Following a fire, school was then taught in various homes until 1826, when another permanent school house was built in the village. The two-story building off Route 661 (Main Street) remains standing and today serves as the Town Hall.

In 1881, Snell listed six school districts serving 343 school age children in Frelinghuysen; namely, the Johnsonsburg School, Marksboro School, Paulina School, Ebenezer School, Southtown School and Howard School. The Yellow Frame School also existed off Muller Lane. All of these schools were mostly one and two-room structures. (*History of Sussex and Warren Counties, 1881; Pg. 689*) With the exception of the Town Hall and the Methodist Church Community Center, most of these buildings were converted for residential use following construction of the Frelinghuysen School off Route 94, in 1956.

Transportation

Construction of railroads and establishment of more permanent roads in the late 19th Century vastly increased industrial development, population growth and demographic shifts as mostly Irish immigrants joined communities throughout Warren County. (*Warren County Cultural Resources Survey, 1991; Pgs. III-3-7, II-13*)

Railroads set the course toward industrial development in Frelinghuysen offering a new and reliable transportation service for farmers and merchants. Two rail lines served the Township around the turn of the century into the 1950's. The New York - Susquehanna & Western Railroad (NYS&W) was built in the 1880's to follow the Paulins Kill from Columbia to Sparta. The Borden, a.k.a. Dairyman's League Creamery and Marksboro Depot were located on the northern side of the Paulins Kill, each diagonally across from Thomson's Mill on Spring Valley Road (Route 659) in a deep river gorge. They served the creamery and although torn down long ago, the area near both sites is replete with dairy and railroad artifacts. Dismantled in the 1970's, the NYS&W railroad easement was purchased in 1992 by the N.J. Green Acres program and converted to public use as the Paulinskill Valley Trail. A premier 26-mile passive recreation corridor, it is very popular to hikers, equestrians, anglers and bicyclists. Motorized vehicles are prohibited except for State personnel and by special farm permit. (*Personal observations*)

In 1911, the Lackawanna Cut-Off to the Delaware-Lackawanna & Western (DL&W) railway was opened to provide a 28-mile, straight route from Scranton, Pennsylvania to New York City via Hoboken. The railroad tunnel on Route 661 (Ramsey Road) is testament to the ingenuity and hard labor required to build the level course however, it later proved to be "a famous engineering feat which never did pay off." (*Historical Sites of Warren County, 1965; Pg. 47*)

The double track provided both passenger and freight service, although one line was subsequently removed in 1958. The last trip of the deluxe Lake Cities train from Chicago spelled the end of passenger service on the DL&W in 1970. Freight service continued sporadically until 1979 and although Amtrak ran a few test trips on the Cut-Off, passenger service was deemed

unfeasible and never resumed. Rail tracks were removed in 1984 and the entire line sold to a private developer shortly after. (*F. Rielly, Morris County D.O.T., 1997; Chronology*) The entire line is now owned by the New Jersey Department of Transportation (N.J. DOT).

Although long abandoned since the tracks were removed in 1984, the Lackawanna Cut-Off holds a place of honor and fond nostalgia for many residents of Frelinghuysen. Charles Rydell, whose family farm off Kerrs Corner and Lanning Roads was bisected by the railway, writes of days when it offered not only a quick way to reach far away Yankee Stadium, but also brought coal, reliable mail service, expanded transport for local commodities and the pleasant diversion of interacting with interesting new people. Railroad construction provided employment for many local residents. (*Memories....., 2005; Pgs. 12-32*)

Reactivation of the Cut-Off is supported by many on both sides of the Delaware River who see it as a means of relieving the "gridlock" that often occurs on Interstate Route 80. Mass transit will offer another transportation route from Pennsylvania to New York City with stops in between. A train depot is slated for Blairstown, yet has not to date garnered support from that municipality. Frelinghuysen Township has gone on record suggesting they use the old Johnsonburg train depot site off Kerrs Corner Road instead. (*Memories...., 2005; Pg. 30-32*)

The project remains the subject of much debate over the fear that infrastructure improvement through Warren and Sussex Counties may lead to increased development. The price tag to date is estimated to cost \$380 million. The project is still pending final approval and funding.

Later Years

From the 1930's up until World War II, the natural resources of Frelinghuysen provided refuge and purpose for many young men, mostly from New York City, who found themselves financially displaced by the Great Depression. A federal Civilian Conservation Corps (C.C.C.) camp was set up at Jenny Jump State Forest on State Park Road, near Hope. "The men stationed here did the usual tree planting, road building, and fire fighting, and, in addition cleared and dredged the clogged Pequest River. This project led to the rejuvenation of vegetable farming on rich muckland." (*Warren County Chronicles: Good Guys, Bad Guys, 1999; Pg. 15*)

In the 1960's Frelinghuysen once again became a refuge for displaced persons and gained national notoriety. A Johnsonburg resident, James Cooke, provided housing and employment for Cuban refugees who used his property to train for a military invasion of Cuba, whereby Cooke also hoped to reclaim vacation property that had been seized by Fidel Castro. Firearms activity on the property every weekend became "so noisy and threatening" that Cooke eventually fired these workers in 1962 and their cause was moved to a nearby farm in Hope for a time. Backed by the U.S. government, the cause had financial backing and expanded to include a planned military invasion of Haiti. Training resumed, this time at a farm near State Park Road in Frelinghuysen. Although having generated much media attention, the planned invasions were eventually scuttled and many exiles either moved elsewhere or assimilated into local communities. (*Warren County Chronicles: The Undercover Boys, 1999; Pgs. 13-20*)

Population & Future Growth

According to the 2005 Warren County Strategic Growth Plan, the population of Frelinghuysen in 2000 stood at 2,083. This represented a 17% increase in population from the 1990 Census which counted 1,779 residents. Historically in Frelinghuysen, the U.S. Census counted 715 persons in 1940; 779 in 1950; 845 in 1960; and, 1,118 in 1970. This represents a 30% increase each decade from 1960 to 1990. The Township's 2005 Master Plan Re-examination Report reports dramatic housing growth from 1980 to 1990. New housing development increased by 50% during this time period. (Pg. 4)

The Township is designated within the North Warren cluster of municipalities, including Blairstown, Knowlton and Hope. In this region, Frelinghuysen, Knowlton and Hardwick were found to have experienced the same level of population increase from 1990 to 2000, while neighboring Allamuchy counted an 11% increase and Blairstown eight percent.

Although on par with three neighboring municipalities, 20% population growth in one decade may be seen as dramatic, yet it is significantly less than what was projected in the 1975 Frelinghuysen Master Plan Addendum which called for 4,890 persons by 2000 (Pgs. 5-6) and far less than the 7,200 residents projected for the year 2000 by the 1966 Frelinghuysen Township Master Plan. In those days, there was concern that development of the Delaware National Recreation Area in Knowlton and Pahaquarry, now Hardwick, might result in future interchange construction in Frelinghuysen directly exposing summer visitors to the Park who may then choose to relocate to the Township. To date, the nearest highway interchanges are in Allamuchy and Hope. (Plate 6; Pgs. 23-26)

Taking into account national census trends and building permit data as well as potential effects on development resulting from the newly enacted Highlands Act, the 2005 Warren County Strategic Growth Plan's build out analysis projects that Frelinghuysen may see population levels reach 2,921 by 2030, or roughly 40% higher in twenty-five years. Overall, Warren County's population increased 12% between 1990 and 2000. A total of 38 residential building permits were issued between 2000 and 2003 in Frelinghuysen Township. (Pgs. 11-13, 18)

According to county projections, the North Warren region including Frelinghuysen, Hardwick, Blairstown and Knowlton would potentially see 610 more high school students. School age children in kindergarten through 8th grade may increase 272% in Frelinghuysen at build-out, when all available building lots would conceivably be developed under current zoning standards, representing 1,254 additional elementary school-aged children (Warren County Strategic Growth Plan, 2005; Pg. 76). For Frelinghuysen, it's important to note the County will revise this figure due to the Township's new 6-acre zoning standards.

In Warren County, the adjoining municipalities may see the following increases in school age children, according to current zoning standards:

Hope	152%	Allamuchy =	74%
Hardwick =	89 %	Independence =	62%
Blairstown =	87%		

Town Planning Consultant, John Madden, reported there are no pending development plans, except for a concept plan submitted for the 300-acre Riviello property located off State Park Road, proposing 35 single-family homes. The Township Planning Board did not look favorably on the concept plan last Fall. (Tel. communication; 11-17-05) Public sewer and water service is not available in Frelinghuysen Township.

There is some concern that Frelinghuysen's designation in the Highlands Planning Area may lead to future growth that would otherwise have been developed in the Preservation Area. Thus exercising the power of municipal zoning and land use planning, the 2005 Township Master Plan Re-examination Report proposed changing the former 4-acre residential zoning districts to create minimum 6-acre residential lot sizes for development, wherein 4-acre lots were previously allowed. The Township Committee recently approved the ordinance supporting this recommendation. The new regulations allow hamlet conservation subdivisions, farmland preserves, country estates and planned senior housing developments with the implied objective of preserving as much open space and farmland as possible. (Pgs. 6, 20-25)

For example, the Hamlet Conservation subdivision would require at least 60% of the parcel in question to be deed-restricted for open space use. In areas targeted for farmland preservation as per Frelinghuysen's 2005 Farmland Preservation Plan, allowances would be made for farm offices and subdivisions provided significant portions of the properties in question would be set aside for open space preservation.

THE OPEN SPACE PROGRAM

GOALS AND OBJECTIVES

The Frelinghuysen Township Open Space and Recreation Plan provides a comprehensive picture of land use and identifies areas for future land preservation. The intent is to have this Plan adopted as an element of the Township Master Plan.

Several goals and objectives were expressed by members of the Township Committee, Environmental Commission, Farmland Preservation Commission, Recreation Committee, Historical Society, and other participants via meetings, telephone interviews, a visioning workshop at an Environmental Commission meeting on September 26th, and an open space tour held July 16th. The first Open Space and Recreation Plan public hearing was held October 26th to present the Open Space Map, discuss the upcoming referendum and gauge public preferences regarding land preservation. A second public hearing was held on February 13, 2006 to receive public input on the Draft Open Space and Recreation Plan. (*See Appendix – OSRP Hearing Minutes and Public Notices*) The following goals represent a compilation of all goals expressed.

- Continue farmland preservation
- Create a network of trails for hiking, bicycling and equestrian activities
- Encourage multi-use development of Township property
- Identify and acquire land for recreation
- Protect ridgelines and riparian corridors
- Restore historic villages and protect historic treasures
- Protect scenic vistas and utilize regulations to minimize land disturbance
- Protect forestland and encourage woodland management
- Allow hunting and fishing where permissible
- Maintain pastoral attributes such as country lanes and byways
- Preserve wildlife habitats
- Preserve natural springs and sinkholes

CONSISTENCY WITH STATE, COUNTY AND LOCAL PLANS

“The next step in planning for Frelinghuysen would be to develop a concept plan involving each property to create a connected system of open space. It is the province of the town to figure out how all these lots should work together.”

(John Madden, Frelinghuysen Planning Consultant - Tel. communication; 11-17-05)

The New Jersey State Development and Redevelopment Plan (N.J. SDRP) is currently undergoing the required Cross-Acceptance III process as the final stage for soliciting municipal comment before adoption. Frelinghuysen Township is designated within SDRP planning areas PA-4, PA-4B and PA-5 recommending planning strategies that are conducive to a rural and environmentally sensitive locality. The goals set forth in the Frelinghuysen Township Open Space and Recreation Plan, namely, to provide for increased land preservation for the purpose of safeguarding environmental, agricultural, historical and recreational attributes and opportunities are consistent with the planning design and intent put forth in the State Plan for Frelinghuysen.