



SUSTAINABLE COMMUNITIES PLANNING GRANT

TOWN OF FREDERICA

Email: townoffrederica@yahoo.com

Website: frederica.delaware.gov

Facebook: [townoffrederica](https://www.facebook.com/townoffrederica)

Tel: (302) 335-5417

2 W. David Street,

Frederica DE 19946



TO OUR STAKEHOLDERS

This plan would not have been possible without the hard work and dedication of our community volunteers, staff, and agency partners. We are deeply grateful for the time invested, community interest, and overall commitment devoted to designing a sustainable future for the Town of Frederica.

This grant was made possible through Delaware's participation in the Regional Greenhouse Gas Initiative (RGGI).

PLANNING AND STEERING COMMITTEE

Bethany DeBussy, Frederica Town Clerk, Project Lead
 Dustan Russum, Frederica Public Works Director
 Daniel Barbato, PE, Pennoni Engineering, Project Consultant

Kathy Jackson - DE Department of Agriculture
 Michael Tholstrup - DE Department of Natural Resources (DNREC)
 Ann Gravatt - DE Department of Transportation (DeIDOT)
 Todd Pryor - DE Department of Transportation (DeIDOT)
 Linda Parkowski - Kent Economic Partnership (KEP)
 Matt Carter, PE - T² Center, Circuit Rider

Milt and Nancy Elliott - Residents
 Anita Hart - Resident
 Robert Kitz - Resident
 Virginia Simpler - Resident

William C. Glanden, Mayor
 Pete Rager, Council Secretary
 Virginia Simpler, Council Treasurer
 Jesus "Poncho" Davila, Councilmember
 Ricky Maddox, Councilmember

Mandy Slody, Planning and Zoning Administrator

Special acknowledgment for two members of our organization who contributed to and believed in the future of this project, but sadly passed away before its completion.

William W. Pepper, Sr., Town Solicitor
 John "Jack" Webb, Councilmember

HISTORY AND BACKGROUND



The Town of Frederica is located in Kent County, Delaware, southeast of Dover on the banks of the Murderkill River near Andrews Lake and Killen's Pond State Park, and covers a total area of about 1,098 acres.

The Town of Frederica is part of a grant of land originally deeded to Mr. Boneny Bishop by William Penn in 1681 and designated on survivors' records as St. Collom. The bend on the Murderkill River that later became the port was first called Indian Point. As its importance to the early settlers grew, it came to be referred to as Johnny Cake Landing. A detailed survey of the waterfront was conducted in 1758, and the plot where most of the shipping activity occurred was named Goforth's Landing. This parcel provided a nucleus around which the rest of the town was surveyed and laid out in lots by Jonathan Emerson in 1772. In 1796, one of his daughters, who were concerned that a town located so close to Barratt's Chapel, even then recognized as a historical Methodist landmark, bore the rather informal name of Johnny Cake Landing, proposed that it be renamed Frederica Landing. This name stuck, and the Town of Frederica was formally incorporated as such by an act of the state legislature in 1826. In 1855, the 1826 incorporation act was repealed. However, the section delineating the Town's boundaries was retained. Ten years later, in 1865, the Town of Frederica was reincorporated. At this time, Frederica's population was slightly fewer than 600 people. Almost 100 years later, in 1950, the Town was again reincorporated. Between reincorporation, Frederica's population grew by nearly 100 people.

Like several other Kent County river towns, the Town of Frederica was located on the first relatively firm land to be found inland along the banks of Murderkill River, at a point where it was still navigable. This is approximately six miles from the Delaware Bay shore, where at that time it was surrounded by fertile fields and dense stands of pine, white oak, spruce, and walnut trees. The Town's location among wetlands leads to the nickname "Frogtown" because of the large number of frogs that made the area their home. The nickname has stuck into the present day and is depicted on the trucks of the Frederica Volunteer Fire Company. These geographic factors gave rise to the shipping and shipbuilding activities that dominated the Town's economy. Another factor was the proximity of the dynamic and prosperous city of Philadelphia and the ease with which ships and boats could reach its wharves and docks at a time when roads were often impassable. For decades, Frederica's fortunes would be as firmly linked to Philadelphia as they were to the other towns of Kent County because of the convenient water route between them.

The early settlers were not slow to capitalize on these opportunities. The most important cargos shipped on the Murderkill in colonial times comprised of bacon, beef, corn, wheat flour, cedar shingles, cheese, butter, tar, pitch, and hardwood boards.

The Town of Frederica's port prosperity diminished slightly in 1857 when the railroad took over the transport of lumber and bark. The railroads brought efficient overland transportation to Kent County, which resulted in an increasingly larger share of grain, produce, and bulk-fertilizer business being diverted away from river shipping. The improvement of the county road system worked more to the advantage of the railroads than it did to the ports, particularly when the trains could offer refrigerated transportation in insulated cars with ice bunkers. The Town of Frederica's shipping interests had fought hard to prevent the Delaware Railroad from passing near the Town, with the result that growth was halted and the community became even more isolated from neighboring towns. Once they realized their mistake, the citizens of Frederica launched a major campaign to get a railroad connection, at one time even going so far as to charter a line that would connect Dover directly to Milford by a route that passed through the Town. This never came to pass, sharing the fate of another scheme to connect the Town of Frederica to Felton by a seven-mile-long branch. After 40 years of futile efforts, the Town gave up on the railroad. Currently, the nearest railroad stations are in Felton (approximately six miles west), Milford (approximately seven miles south), and Dover (approximately ten miles north).

In about 1890, the last shipyard closed, but important sources of profit and employment could be found in other industries. By 1887, Frederica had three canneries, including the Reynolds' and Postle's tomato cannery, at that time the largest in the United States. Other businesses included Rodgers and Son fertilizer manufacturing, the Lewis hat factory, two brush factories, a cooper, a butcher, a hotel, a clothing house, and ten general stores. The steamship service of Frederica, owned and managed by the Frederica and Philadelphia Navigation Company, provided transport at a price and speed competitive with the railroad, allowing the Town to hold into its Philadelphia markets well into the 20th century.

With the onset of the Great Depression, the steamer found its prospects for the future diminished. The improvement of U.S. Route 113 in the mid-1920s had resulted in the construction of a causeway across the Murderkill at Barratt's Chapel, which effectively cut the Town off from the bay. The improvement of local roads meant that the citizens of Frederica could get to Harrington, Dover, and Wilmington more easily and were not so dependent on their connection with Philadelphia. Business for the steamer fell off, with the railroads getting the last of the produce shipments. Shortly afterward, the railroad was supplanted by heavy highway trucks. Maritime activity fell off until it consisted only of some small-scale oyster and sturgeon fishing, which has now disappeared.

Today the port is quiet, the canneries are closed, and so are many of the formerly thriving businesses. Auto and truck traffic on the Coleman DuPont Highway and U.S. Route 1 bypass the Town, carrying the passengers and freight that would have once been transported by Frederica ships. Protected from change brought about in other parts of the county, first by rail, then by highway transport, Frederica offers a rare look at one of Kent County's earliest water-based economies.

DEMOGRAPHICS

Frederica's racial/ethnic groups are approximately 46% white, 36% black, and 11% Hispanic. In 2018, the median income in Frederica was around \$46,000 per household, with an estimated 18% of residents living in poverty. The income level is significantly lower than state and county median income levels, with a higher overall poverty level. Frederica's households, while diverse, are in great need of local resources.

According to the U.S. Census 2010, the Town of Frederica had a population of 774 residents in 2010. This is a notable 13% increase from the 2000 census population of 648, following a long period of population decline. Today, it is estimated that the population is between 900 and 1,000 residents due to the recent completion of the Water's Edge residential development located on Frederica Road. At these numbers, the Town has far exceeded the population projection numbers estimated in the Comprehensive Plan. With the more recent interest in residential growth and commercial development in and around the incorporated limits of Frederica, attention has turned to plan a more sustainable future.

LOCAL FOOD SYSTEM

VISION AND GOALS

The Vision Statement of the Town's Sustainable Community Plan calls for addressing the local food system by planning approaches to eliminating the status as a food desert.

PROGRESS

The remaining businesses within Town limits are the Frederica Pizza & Pasta House and the Family Dollar store. As most traffic has been directed outside of Town, those who can travel have grown accustomed to driving several miles to Milford or Dover to seek accommodations for food and recreational sources. There are no grocery stores available within 10 miles of town limits. As part of a sustainable future, the Town wants to identify potential opportunities for attracting and maintaining local sources of food and recreation outside of the existing two commercial properties. The surge of traffic in the area due to the success of events at the DE Turf Sports Complex also encourages a need for additional food and recreation resources.

To understand the needs and habits of residents, a survey was created and sent to all living within Town limits at the beginning of this project, in February 2018. From that survey, the working group was established. Once the results were received, the minimal information available to work with dictated a need for an extended survey - which was completed in May 2019. This survey, with similar questions, was sent to every property located in the 19946, which obtained a much greater scope of data for those who hold interest in Town resources that may become available. The results of the survey are attached in the appendix. From this survey, an understanding of the travel habits and needs of residents was compiled. As great interest in the Farmer's Market was shown, the working group reached out to the Department of Agriculture to have a presence at future planning meetings to discuss the potential for developing a Farmer's Market within Town limits.

With the new relationship established with the Dept. of Agriculture, a second working group has now been established to attend training and tour other existing Farmer's Market locations throughout the state. The Town hopes that interest in this group will grow, out of which a Market Manager can be determined. The information has also been shared about the WIC and SNAP programs connected to the Dept. of Agriculture that will greatly benefit the low income and senior citizen populations in the area.

There is a former junkyard site on Frederica Road, which the Town has previously purchased and cleaned up through the Brownfields program. This site has been earmarked for planning purposes for a future Farmer's Market location as it needs to be maintained as a green space per the cleanup agreement. As of the grant completion date, a preliminary plan has been designed by Pennoni and is attached in the appendix.

Until this plan can be developed further, the working group discussed the possibility of establishing an agreement with the Food Pantry program to supplement food shortages that may be facing residents in and around the town.

It is also recommended that the Town maintain strong relationships with Kent County Levy Court and the Kent Economic Partnership, (as well as any other nearby businesses and organizations) to keep ahead of any potential growth and development in the surrounding regions, as well as to stay up to date on any opportunities to encourage commercial growth, whether it is by obtaining development grants or identifying available properties and needs of the residents.

ACTION PLAN - LOCAL FOOD SYSTEM	COST	TIME FRAME	STATUS
Survey Community regarding food sources, ideas for supplementation (Town residents, property owners)	\$300	February 2018	Complete
Survey – Same as the previous survey but expanded to entire 19946 zip code	\$1,300	May 2019	Complete
Establish a relationship with the Department of Agriculture to begin Farmer's Market planning	-	2019	Complete
Identify potential Farmer's Market locations within Town limits	-	2019	Complete
Establish a working group/committee to research and develop a Farmer's Market Program	-	2020-2021	Pending
Identify/Appoint a Farmer's Market Manager		2020-2021	
Attend annual training, research existing Farmer's Markets		2020-2021	
Explore WIC and SNAP programs through USDA/Dept. of Agriculture for low income and senior populations	-	2020-2021	
Reach out to local vendors		2020-2021	
Explore Food Pantry program options through the Dept. of Agriculture until Farmer's Market develops	-	2020	Pending
Maintain relationship with the Kent Economic Partnership (KEP) to advocate for food resources related growth and development in the region		Ongoing	
Maintain partnership with Kent County and the Master Planning initiative for S. Frederica, identify and advocate for needed food resources in future development areas	-	Ongoing	Initiated

REDUCING ENERGY USE

VISION AND GOALS

The Vision Statement of the Town's Sustainable Community Plan calls for reduced energy use. The primary goal is to reduce the Town's energy use in building lighting and street lighting. A broader secondary goal identified in the Plan is to reduce energy use by reducing the need for residents to travel for basic services.

PROGRESS

The primary goal of lighting evaluation was completed. Streetlights in the Town were determined to be owned and operated by Delmarva Power, and therefore not included for further evaluation at this time. The Town will encourage Delmarva Power to convert streetlights as part of their program for budgeted replacements and will communicate to Delmarva Power the desire for the Town to be more energy efficient in general.

Town staff completed an inventory of lighting in all Town-owned facilities in June of 2019, which included two well houses, Town Hall, the Police Station, and the Public Works building. The inventory of lighting fixtures is included below. In all facilities, most of the lighting is incandescent with some fluorescent fixtures. The incandescent fixtures offer the greatest opportunity for lighting efficiency improvement and energy savings. The Town has started to replace some of the fixtures and bulbs as they need replacement or as part of facilities upgrades. Some fixtures more visible to the public such as the overhead chandelier in Town Hall were converted to LED to demonstrate the Town's commitment to energy savings.

The lighting inventory table shows the four facilities with each fixture, the total wattage for each fixture, and the total wattage per building. This inventory satisfies the Plan requirement to perform a lighting audit.

It is well established that although LED bulbs cost significantly more than incandescent, for the same value of lighting intensity or Lumens, the wattage requirement is much lower, and the bulb life is far greater. Readily available internet sources show that the average life of an incandescent bulb is about 1,000 hours vs. 25,000 for an LED bulb, and that the typical payback period for the average LED bulb is about 3 years. For these reasons, the Town intends to replace as many bulbs with LEDs as practical in their budget. Because of the longer life span of LED bulbs, the labor cost required to change bulbs is greatly reduced, which also contributed to greater cost savings over time.

It is evident that lighting conversion to LED will save money over time, but more importantly, they reduce energy use, which is the primary goal for the Town. The Town acknowledges this and as evident in the lighting audit table, several fixtures have already been converted to LED as stated above.

Examining lighting efficiency has raised the Town's awareness of energy use overall and as a result, several other changes were made to enhance energy savings, including replacement of the aged Town Hall boiler with a high-efficiency HVAC system, sealing and weatherproofing the large glass windows in Town Hall and during the two Town Hall bathroom remodeling's, selecting water-conserving fixtures.

In 2010, Brightfields, Inc. performed energy Audits for three Town-owned facilities – Town Hall, one well house, and the Public Works building. These reports were reviewed as part of the overall examination of Town energy use. Electric use at the well houses is primarily from pump motored and heaters. For the Public Works building, energy use is primarily from winter heating, and for Town Hall, most of the energy use is from summer cooling. In keeping with the secondary goal of improving overall energy efficiency, the Town will examine energy savings opportunities for these, and other facilities as listed below in the Action Plan

The following steps and action items are part of the Town's plan to reduce energy use, in both lighting and in general:

REDUCING ENERGY USAGE	COST	TIME FRAME	STATUS
Perform a lighting and energy audit of all Town-owned properties		2019	Complete
Establish an improvement plan to replace energy inefficiencies in each property, including swapping lighting to LEDs		2019	Complete
Contact Delmarva Power – Encourage the conversion of streetlights to LED		2019	Complete
Establish improvement plan to swap out a percentage of street lights to LED each year with the budget process		2020-2025	
Document the cost savings of fixture conversions annually		Ongoing	
Review Municipal Street Aid documentation, research and apply for additional funding opportunities to cover the cost		2021	
Seek public and private grant funding and rebates for lighting upgrades			
Explore other opportunities for energy savings such as HVAC upgrades, programmable thermostats, insulation improvement, door and window sealing, and solar power			
Changeout high energy consumption equipment such as pump motors and electric heaters with higher efficiency equipment when replacements are due			
Request that all new lighting in Town-owned facilities be low energy/LED, including the upcoming farm market and park site identified in this Plan			
Update Town LDO and Codes to require energy-efficient lighting in new developments and energy efficiency requirements in new construction			
Increase resident awareness of lighting efficiency impacts and publicize Town's efforts to improve via newsletter articles		Ongoing	
Create a plan to reduce transportation energy use by minimizing the need for residents to travel outside of Town limits for resources (Ties into to other sections of this grant)		Pending	

LIGHTING AUDIT

POLICE STATION		UNIT	TOTAL
Count	Fixture Type	Watts	Watts
2	Outdoor LED	30	60
10	4' multi bulb tube fixture	80	800
3	4' multi bulb tube fixture	160	480
2	Outdoor incandescent bulb	60	120
1	Bathroom incandescent bulb	60	60
1	Parking lot security light	80	80
	TOTAL		1600

PUBLIC WORKS SHOP		UNIT	TOTAL
Count	Fixture Type	Watts	Watts
4	Incandescent bulb - garage door	60	240
3	8' multi bulb tube fixture	120	360
1	4' LED workbench light	30	30
6	8' multi bulb tube fixture	128	768
3	Outdoor security lights	41	123
2	4' multi bulb tube fixture	64	128
1	Bathroom incandescent bulb	60	60
1	2' LED Fixture	30	30
	TOTAL		1739

WELL HOUSE #4		UNIT	TOTAL
Count	Fixture Type	Watts	Watts
9	4' multi bulb tube fixture	64	576
1	Parking lot light	80	80
2	Outdoor security lights	30	60
	TOTAL		716

WELL HOUSE #3		UNIT	TOTAL
Count	Fixture Type	Watts	Watts
4	4' multi bulb tube fixture	68	272
1	Outdoor security lights, LED	30	30
	TOTAL		302

TOWN HALL		UNIT	TOTAL
Count	Fixture Type	Watts	Watts
5	Outdoor halogen light	80	400
2	Outdoor incandescent light	60	120
2	Outdoor incandescent light	120	240
1	4' multi bulb tube fixture, bathroom	160	160
1	3' multi bulb tube fixture, bathroom	32	32
1	20" LED light	15	15

16	4' multi bulb tube fixture	64	1024
1	Lobby chandelier, 25 bulb fixture	4	100
3	First floor recessed can lights	14	42
7	First floor recessed can lights, lobby	100	700
6	Second floor LED recessed can lights	10.5	63
3	Second floor LED recessed can lights	14	42
6	Second floor recessed can lights	65	390
2	Incandescent closet bulb	60	120
3	Incandescent bathroom bulb	43	129
1	Floor lamp	100	100
4	Basement incandescent bulb	75	300
1	Basement incandescent bulb	14	14
	TOTAL		3791
TOTAL LIGHTING WATTS FOR ALL FACILITIES			8148

MAKING FREDERICA WALKABLE AND BIKEABLE

VISIONS AND GOALS

The Vision Statement of the Town's Sustainable Community Plan calls for identification of potential bicycle routes for residents to reach central town areas, and for roads to be designated with bike lanes or sharrows. This goal also includes developing recreational areas in Town that residents can bicycle or walk to, and identifying areas where sidewalks need improvement or need to be added to create safe walkways from neighborhoods to key destinations in Town.

PROGRESS

To get started with this phase of the grant, the survey results were mapped to get an idea of foot and bicycle traffic throughout the Town. The map was able to identify popular destinations and priority biking and walking routes, as well as concerns noted by residents. The map is included in the appendix.

The map led to discussions of the feasibility of sharrows existing due to narrow roads that have little to zero room for expansion. It is recommended that this be explored in future discussions with DeIDOT due to those complications. In the meantime, it is suggested that the Town begin reviewing ordinances restricting and regulating parking on narrower streets to improve safety for pedestrians.

The working group then refocused on walkability. Recognizing issues with existing sidewalks, and with knowledge of a previous TAPP application for sidewalk improvements in certain areas of town, the group needed a professional sidewalk study to grasp the true state of existing infrastructure. The Town coordinated with the T2 Center to complete a thorough sidewalk study in the summer of 2019 – providing valuable information for not only this grant but for future grant and compliance studies. It is recommended that the Town combine this information with the previous TAPP application, as well as this entire plan to apply for a broader scope TAPP application project in the future.

With the identification of a potential Farmer's Market location from the previous section of this planning grant, the idea of developing a recreational space and/or community park in the same lots began to surface. The action plan outlines seeking additional funding opportunities to obtain park and recreation-related equipment, as well as developing a designed plan for a multiple-use space. Once the Brownfield's certification is obtained, work can begin developing this space for future use.

With the development of this plan, it is apparent that the Comprehensive Plan needs to be reviewed and updated to specify growth and development along the newly defined Frederica Road corridor - where the planning grant has directed future traffic. The Town should work with the State Planning Office to obtain guidance on amending and redirecting growth opportunities for its residents, which has shifted away from the original area recognized in the 2004 Comprehensive Plan. If this entire area is planned successfully, then future projects can tackle the task of connecting bikeways and walkways from the center of Town, safely along Frederica Road to Water's Edge, and then even potentially out to the DE Turf Sports Complex.

BIKEABILITY AND WALKABILITY	COST	TIME FRAME	STATUS
Create a traffic map from Survey results		2018	Complete
Identify popular and priority biking and walking routes		2018	Complete
Identify biking and walking concerns		2018	Complete
Review existing parking ordinances. Adopt one-sided or limited parking on necessary streets		2018-2020	Complete
Review ordinance regarding sidewalk maintenance policy, determine if a sidewalk improvement plan should be adopted		2020	
Determine feasibility of sharrows (tie in with bicycle-specific future grant opportunities if needed)		2020	
Obtain professional survey and inventory of sidewalks		2019	Complete
Combine original 2017 TAPP application with new plan determined by sidewalk study for larger, cohesive TAPP application project		2020-2021	
Establish a relationship with additional programs and agencies to continue developing the Frederica corridor (UD Sea Grant program and Coastal Resiliency Design Studio)		2019	Pending
Identify recreation/park space		2018	Complete
Complete Brownfields Program Cleanup of park space		2020	Complete
Create a park design to include Farmer's Market space		2020	Complete
Research and apply to additional funding opportunities for park equipment, walking paths, etc. (Game Time, Division of Parks and Recreation, Kent County Levy Court, Local Legislators)		2020-2021	
Seek additional funding opportunities through Bicycle specific grants to address more complicated bicycle needs			
Review and amend the Comprehensive Plan to direct growth and traffic towards the Frederica Corridor			

CONCLUSION

The work here is intended to create a plan that thoroughly embraces sustainability, as well as embedding and instilling sustainable culture within the community itself. In the time that has past since the working group began this planning project, it has become apparent that awareness has become rooted within daily practices as well as future planning and ideas. This grant has achieved the beginnings of uniting a small but disparate community to collaboratively work towards a cleaner, brighter, and more efficient Frederica. We sincerely hope that this project has laid the groundwork for future staff, Council members, and all community stakeholders to continue working together for forthcoming generations of residents and visitors alike to enjoy.

APPENDIX

- First Community Survey
- Broad Reach Community Survey (Second)
- Survey Results
- Original TAPP Application
- Sidewalk Study - Provided by Matt Carter and the T² Center
- Farmer's Market Plan
- Park Plans
- University of Delaware Sea Grant Plan
- Budget Documents

This plan may be viewed in its entirety on the Town's website: frederica.delaware.gov.