



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

December 10, 2004

Mr. Randy DuPlechain
Davis, Bowen & Friedel
23 North Walnut Street
Milford, DE 19963

RE: PLUS review – PLUS 2004-11-05; Rock Creek Village

Dear Mr. DuPlechain:

Thank you for meeting with State agency planners on November 23, 2004 to discuss the proposed plans for Rock Creek Village project to be located between Delaware 1 and Frederica Road on the south side of the Murderkill River in the Town of Frederica. It is our understanding that the development would consist of 59 single-family detached houses, 30 duplex dwellings and 54 townhouses. It should be noted that the land is zoned for residential use in the Town and subdivision approval would be needed for the proposed development to proceed.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Town of Frederica is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the Town.

This office has received the following comments from State agencies:

Office of State Planning Coordination – Contact: David Edgell 739-3090

This project is located in Investment Level 3 according State Strategies for Policies and Spending. This site is also located in the Town of Frederica. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. In this case, the Investment Level 3 designation relates to environmental issues associated with

the site's proximity to the Murderkill River. Our office suggests that any development of this site take all reasonable design measures and best management practices into consideration to protect the water quality in the Murderkill River.

The Town of Frederica's comprehensive plan designates this area as an "office park." Our office is aware that the town is working with the University of Delaware to amend their comprehensive plan to designate this area for residential use. Our office will not object to this change should the Town wish to formally propose it as a comprehensive plan amendment. The Town is also in the process of preparing a Land Development Ordinance to guide new development activities in the Town. Our office has no objections to this proposal provided that the Town amends their comprehensive plan to designate this parcel for residential use, and the developer complies with the Frederica Land Development Ordinance once it is adopted. Please be advised that the comprehensive plan amendment must be reviewed through PLUS and certified by our office. The land development ordinance may be reviewed through PLUS at the Town's discretion.

State Historic Preservation Office (SHPO) – Contact: Anne McCleave 739-5685

It appears that the house on the subject property and along Frederica Road was very recently demolished. The house we have shown in our records indicated that it dated back to the mid 1800s. There are known prehistoric archaeological sites within the subject property, with a high probability for other sites. The proposed development would affect these sites. It is suggested that you contact Anne McCleave at 302-739-5685 to schedule a time their archaeologists can access and walk the property in order to gain a better understanding of the resources and better advise the developers.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) As mentioned above, the project would be located between Delaware Route 1 and Frederica Road. It would have its access on Frederica Road. On the plan presented, that road is labeled incorrectly as Delaware Alternate 113 and Clapham Road. The subject portion of Frederica Road is not designated as a Delaware or US Route.
- 2) DelDOT presently has long-range plans for a grade-separated interchange on Route 1 at the south end of Route 12, but does not have an active project to design or build that interchange. A 1998 concept plan for that interchange showed no direct effect on the subject land. However, the interchange shown in that plan was less than 1,000 feet from the subject land. Therefore, DelDOT recommends that the developer be alert to the possibility of a right-of-way impact on the south edge of the property when the plan for the interchange is revisited.
- 3) Because of the land's frontage on Route 1, the developer will be required to provide a noise study, and any necessary noise mitigation identified in that study.

- 4) It is recommended that the cul-de-sac proposed near the entrance be extended as a stub street to the adjacent property.
- 5) It is recommended that sidewalks be required on both sides of the internal subdivision streets.
- 6) The Delaware Transit Corporation (DTC) provides service to Frederica three times a day by way of its Route 303 bus, which operates between Dover and Milford. The developer should be required to provide an 8-foot by 8-foot waiting pad on Frederica Road at the site entrance and extend the development sidewalk out to it. For more information, the developer may contact Mr. David Dooley, a DTC Planner, at (302) 577-3278, extension 3464.
- 7) The developer's engineer should contact the DelDOT project manager for Kent County, Mr. Brad Herb of Johnson, Mirmiran & Thompson, regarding their requirements for streets and access. Mr. Herb may be reached at (302) 266-9080.

**The Department of Natural Resources and Environmental Control – Contact:
Kevin Coyle 739-3091**

There have been five development proposals along the Murderkill since April 2004:

2004-06-08	2004-11-05	2004-09-05
2004-04-07	2004-11-12	

The approval of these developments will add an additional 1,566 homes along the Murderkill River. The presence of these residential units will bring negative cumulative impacts to the River and adjoining waterbodies, unless the impact can be minimized through the use of appropriate buffers and best management practices. DNREC encourages the local jurisdiction and the applicant to take the comments below into serious consideration, and please contact the Watershed Assessment Section for more information about how to minimize water quality impacts through better site design and buffering.

The following web site contains additional information which will be useful to the developer and the applicant:

http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/mk_tat.htm

Soils

The Kent County soil survey mapping indicates that Sassafras, Mixed Alluvial and Tidal Marsh were mapped in the immediate vicinity of the proposed construction. Sassafras is a well-drained upland soil that has few limitations for development. Mixed Alluvial is a

poorly-drained wetland associated (**hydric**) floodplain soil that has severe limitations for development. Tidal Marsh is a very poorly-drained wetland associated (**hydric**) soil that has the greatest severity for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of estuarine and palustrine tidal and palustrine forested wetlands on this site.

Impacts to wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act; impacts to tidal wetlands are also regulated by the DNREC Division of Water Resources, Wetlands and Subaqueous Lands Section. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the Wetlands and Subaqueous Lands Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

Particularly because of the environmental sensitivity of this area and its status as a proposed State Resource Area, lots should be removed in their entirety from both the wetland and the forest surrounding it. Vegetated buffers comprised of native trees, shrubs or no-mow grasses, of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

It should also be noted that this parcel immediately borders sensitive waters of the Murderkill River; immediately adjoining the northwest and southeast boundary. Since the protection of water quality is a high priority, it is strongly recommended that the existing forested wetlands and/or uplands adjacent to the river be protected in their entirety. Efforts to maximize or expand the existing natural forested buffer width via planting of native woody or herbaceous vegetation, is further recommended.

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a “nutrient-runoff-mitigation strategy” for reducing nutrients in the Inland Bays Watershed, reduction of nitrogen and phosphorus loading will be mandatory. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are authorized under federal code, states are charged with developing and implementing standards to support those desired use goals. The Jurisdictional authority for attaining these use goals will fall under the auspices of Section 11.5 of the State of Delaware’s Surface Water Quality Standards (as amended August 11, 1999), and will be achieved via nutrient reductions referred to as “pollution control strategies.”

Nutrient reductions prescribed under TMDLs are assigned to those watersheds or subwatersheds on the basis of recognized water quality impairments. In the Murderkill, the primary source of water quality impairment is associated with nutrient runoff from agricultural and/or residential development. In order to mitigate the aforementioned impairments, a TMDL reduction level of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

In order for the applicant to verify compliance with the TMDL mandate, a full nutrient accounting process known as nutrient budget should be prepared. The developer/consultant should contact Lyle Jones (739-4590) in the Department’s Watershed Assessment Section for further information regarding the acceptable protocol for calculating a nutrient budget.

The developer is encouraged to employ BMPs (or other pollution control strategies) such as stormwater management and riparian buffers to mitigate any potential nutrient runoff into an adjoining streams or watercourse.

Water Supply

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-3665.

Stormwater Management

Stormwater management is an integral part of the site development infrastructure. The planning and design for stormwater management should begin early. The applicant is encouraged to contact the Kent Conservation District as soon in the planning process as possible in order to receive their preliminary comments. Contact Jared Adkins at (302) 741-2600, ext. 3, for plan submittal and review requirements.

Drainage

The drainage Section is not aware of any existing drainage problems associated with the proposed project.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

The Drainage Section further requests that for any area designated as a drainage/utility easement be open space and not owned by the individual landowners. Structures, decks, buildings, sheds, kennels, fences or trees should not be placed within the drainage easement to allow for maintenance.

Floodplain

Portions of the project are within the 100-year floodplain. It is recommended that construction be limited to those areas outside and above the 100-year floodplain.

State Resource Areas/Natural Areas Inventory

This project contains land currently identified as part of a State Resource Area. State Resource Areas are comprised of lands that contain a variety of natural, cultural and open space resources significant to the state. Consideration should be given to protecting the forested buffer during design and construction of this project. For more information, please contact Ron Vickers, Land Protection Office, 739-3423.

This project contains land currently listed on Delaware's Natural Areas Inventory. Natural Areas contain lands of statewide significance identified by the Natural Area Advisory Council as the highest quality and most important natural lands remaining in Delaware. Consideration should be given to protecting the forested buffer along the Murderkill River during design and construction of this project. The developer should investigate dedicating the forested buffer as a Nature Preserve through a conservation

easement or donation of land. For more information, please contact the Office of Nature Preserves at 739-3423.

Forests

According to 2002 aerial photos there is a forested area within this parcel. The forest provides important riparian habitat, wildlife connectors, and air quality and water quality benefits. This forest tract is extremely beneficial to the region. Fragmentation of this forest can have irreversible effects to the regional ecosystem.

Lot lines should be redesigned to avoid all impacts to the forested area. Therefore, the developer is strongly encouraged to preserve, and where possible, enhance forested resources on site. This includes removing lot lines and infrastructure (such as storm water management ponds) from forested areas to the extent possible and minimizing any clearing activities. The forested areas on-site should be viewed as a community asset and managed appropriately. Where possible, the developer should seriously consider habitat improvements such as revegetating portions of the site to increase the buffer zone to the Murderkill River. A forested buffer of 300' or more would substantially benefit water quality and wildlife habitat.

Forested areas on-site set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will accomplish two things: it will preserve and expand the buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents by allowing them access to and views of the forest and stream.

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Rare/Threatened/Endangered Species

A review of our database indicates that there is a record of *Lechea mucronata* (hairy pinweed) on this project parcel. This state rare plant occurs on the side of route 113 on the eastern border of the project parcel. Impacts to this plant can be avoided by establishing a “no-mow” zone. There are also several rare species within or adjacent to the Murderkill River that could be affected by detrimental changes to water quality. With the number of developments proposed for this area of the Murderkill, cumulative impacts are an issue. Therefore, we recommend that the existing forested buffer be maintained along the perimeter of the project parcel. We further recommend extending the proposed 25ft wetland buffer to at least 100ft. Buffers are an integral component of aquatic and wetland habitats, reducing the amount of sediments, pollutants, and other non-point source material that may affect the function and integrity of habitat and the condition and survivability of aquatic organisms. Forested buffers also serve as habitat for many terrestrial species that are dependent on aquatic and wetlands habitats for a portion of their annual life cycle. In addition, we recommend leaving the wooded area in the southern section of the western project parcel.

In addition, because of the existence of the Murderkill River state Natural Area, this project lies within a State Natural Heritage Site. However, it does not lie within a Delaware National Estuarine Research Reserve. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters – if this is an issue – will be made by the U.S. Army Corps of Engineers (ACOE). The information above will aid the ACOE in their determination

Nuisance Species

The ponds scattered throughout the subdivision will likely attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. Although small numbers of these species are enjoyed by residents, geese and swans can quickly multiply and overwhelm the area. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Ponds that remain in the subdivision plan should be landscaped to deter nuisance species. Short manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area around ponds, are not as attractive to geese because they do not feel as safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the homeowners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Revegetation/Landscaping

It is requested that no invasive species be used in the revegetation of disturbed or landscaped areas. A list of species considered invasive in Delaware can be found on the DNHP web site, www.dnrec.state.de.us/fw/invasive.htm. The DNHP further encourages, where possible/feasible, the use of native plants for habitat restoration projects on-site and their Botanist, Bill McAvoy can be contacted at (302) 653-2880 to assist you in developing a plant list.

Recreation

It is recommended that sidewalks be built fronting every residence and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, public mass transit stops, schools, stores, work, etc.

Underground Storage Tanks

There are no LUST site(s) located near the proposed project. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would be need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel in the contaminated areas.

Air Quality

Air pollution threatens the health of human beings and other living things on our planet. While often invisible, pollutants in the air create smog and acid rain, cause cancer or other serious health effects, diminish the protective ozone layer in the upper atmosphere, and contribute to the potential for world climate change. Breathing polluted air can have numerous effects on human health, including respiratory problems, hospitalization for heart or lung disease, and even premature death. Some can also have effects on aquatic life, vegetation, and animals.

Once complete, vehicle emissions associated with this project are estimated to be 11.0 tons (21,949.0 pounds) per year of VOC (volatile organic compounds), 9.1 tons (18,172.3 pounds) per year of NO_x (nitrogen oxides), 6.7 tons (13,407.9 pounds) per year of SO₂ (sulfur dioxide), 0.6 ton (1,193.5 pounds) per year of fine particulates and 918.0 tons (1,836,006.5 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 4.4 tons (8,853.0 pounds) per year of VOC (volatile organic compounds), 0.5 ton (974.1 pounds)

per year of NOx (nitrogen oxides), 0.4 ton (808.4 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (1,043.2 pounds) per year of fine particulates and 17.9 tons (35,888.2 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.8 tons (3,508.7 pounds) per year of NOx (nitrogen oxides), 6.1 tons (12,204.2 pounds) per year of SO2 (sulfur dioxide) and 900.1 tons (1,800,118.3 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	11.0	9.1	6.7	0.6	918.0
Residential	4.4	0.5	0.4	0.5	17.9
Electrical Power		1.8	6.1		900.1
TOTAL	15.4	11.4	13.2	1.1	1836.0

The Department of Natural Resources and Environmental Control is asking that local jurisdictions consider mitigation to help resolve this issue. Mitigation might involve limiting large new developments to growth zones, focusing development to urban areas capable of providing mass transit services, requiring more energy efficient homes which would lessen air quality impacts, and promoting walkability and bikability within and between developments and town centers.

With that said this State notes that this proposed development is within the Town of Frederica. Therefore, the State would ask that you consider the development of energy efficient homes and interconnectivity with the Town and surrounding commercial areas to promote walkability and bikeability.

State Fire Marshal's Office – Contact: John Rossiter 739-4394

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

- a. **Fire Protection Water Requirements:**
 - Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
 - Where a water distribution system is proposed for townhouse type dwellings it shall be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 feet spacing on centers are required.

- The infrastructure for fire protection water shall be provided, including the size of water mains.

b. Accessibility:

- All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Clapham Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- If the use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

c. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Townhouse 2-hr separation wall details shall be shown on site plans
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Public Service Commission - Contact: Andrea Maucher 739-4247

It appears that the project is not within the Town of Frederica's CPCN area, but it is within the Town's boundaries. If annexation occurred after July 13, 2001 (22 Del. Code,

Chapter 1) then the town need only notify the PSC when the annexation was finalized. If annexation was prior to that date, Frederica may need to apply for the CPCN.

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Karen Horton 739-4263

This proposal is to develop 143 residential units on 45.42 acres in Frederica and will consist of single-family detached, duplex, and townhome units and it is located in Investment Level 3, according to *the State Strategies Map*. DSHA supports this proposal because it is located in an area where the state is encouraging compact, mixed use development. In addition, some of these units will be targeted for first-time homebuyers. The provision of these units will help address the need for affordable homeownership that was identified in the 2003 Statewide Housing Needs Assessment.

Delaware Emergency Management Agency – Contact: Don Knox 659-3362

Due to the large number of residential units being proposed, a significant impact to public safety is foreseen by implementation of this project. The developer should notify the police, fire service, and emergency medical response organization serving this portion of Kent County, to keep them apprised of all development activities.

Portions of this property are located in the Special Flood Hazard Area inundated by the 500-year flood. This area could also experience possible flooding from a category 2 or greater hurricane.

Routes 1/113 and 12 are coastal storm evacuation routes and this development will be affected by traffic volume on these routes during a coastal storm event.

Department of Education – Contact: Nick Vacirca 739-4658

143 dwelling units could generate an estimated 72 additional students for the Lake Forest School District.

Kent County does not have school concurrence legislation at this time. It is recommended that the developer submit a package to the school district for informational purposes.

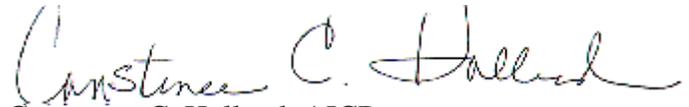
If the development is approved and build, please use the following information for school transportation planning. If there are homes more than 1/2 mile from the nearest public road (outside the development), developers should plan wide enough streets so that large school buses can access and turn around (without backing) from the furthest areas within the development while picking up and dropping off students. Should there not be any sites more than 1/2 mile from the nearest public road, provisions for appropriate pick-up

and drop-off at the development entrance should be included. The developer should work closely with the school district transportation supervisor.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in cursive script that reads "Constance C. Holland". The signature is written in black ink and is positioned above the printed name and title.

Constance C. Holland, AICP
Director

CC: Town of Frederica
Harrington Realty, Inc.