1/21/21

A Review of Stormwater Management at Evans Farm Apartments, by Evans Farm Watch, with input from Neighboring Communities.

Discussion:

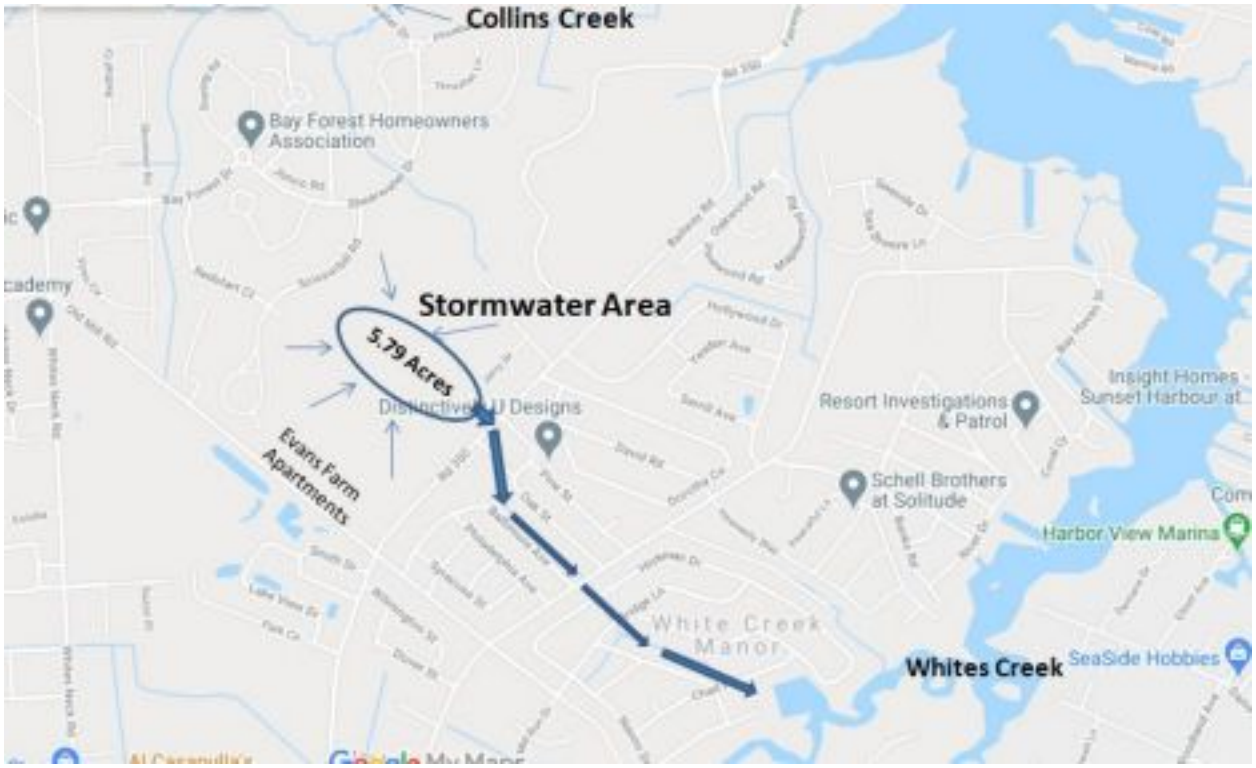
Stormwater Management is a big problem for the communities and private homeowners in the vicinity of Evans Farm.

The state of Delaware has recognized the importance of Stormwater management and the need to protect the land of property owners and protect our inland waterways from pollution, overuse and erosion. State laws and regulations are in place and we need the Sussex Conservation District to fully review the current stormwater management of the area around Evan Farm (to help resolve existing flood issues) and also to confirm that any additional stormwaters from Evan Farm will be harmful and potentially dangerous to residents and their source of well water.

Any planned community over 5000 sq. ft. must follow local rules and regulations and design their stormwater management systems to: collect, filter and channel the waters from their property to a point where the water can be properly managed or to a point where the water will eventually lead to a natural tributary. Large developments typically have an array of interconnecting holding ponds, all of which eventually lead to an approved point of returning the water to a natural tributary and often through a series of filtering before release. In the immediate area of Evans Farm there is Collins Creek to the north and Whites Creek to the east.

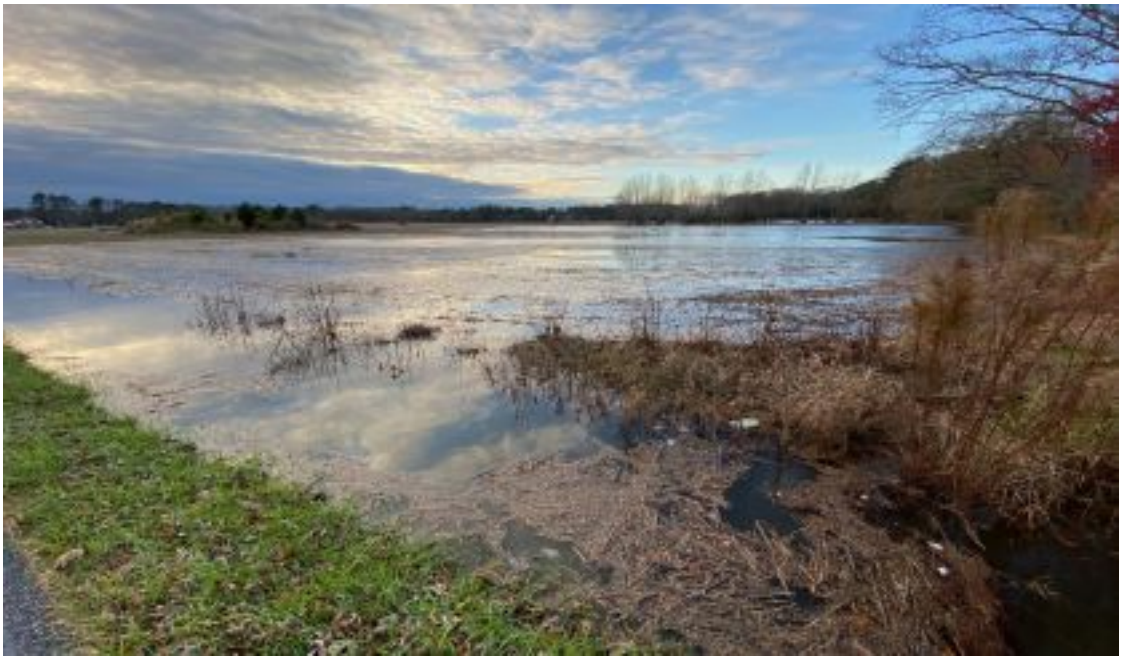
Evans Farm Apartments is basically Landlocked

The proposed Evans Farm parcel is landlocked and does not have direct access to channel their storm water away to either Collins Creek or Whites Creek . There is one existing small drainage ditch and pipe on the northeast end of Evans Farm which ties into a depression that parallels Railway Road. Any developmental disturbance of the land on Evans Farm to further utilize the drainage ditch, ground depression and metal culvert pipe that runs under Railway Road will only worsen existing flooding conditions that homes are experiencing going east to, **Banks Acres,** Whites Creek and to nearby homes and neighborhoods in all directions.



Recent Stormwater Event

On Dec. 16, 2020 (per Univ Del / edu.com) 2.1 inches inches of rain fell in 24 hrs. in the Ocean View area (which includes Evans Farm) . Communities and roadways along Railway Road, Baltimore Ave., Hickman Dr., Clubhouse Road, Old Mill Dr. and all the other streets towards Whites Creek were flooded, and totally covered with water for 3 days - as well as portions of Evans Farm.

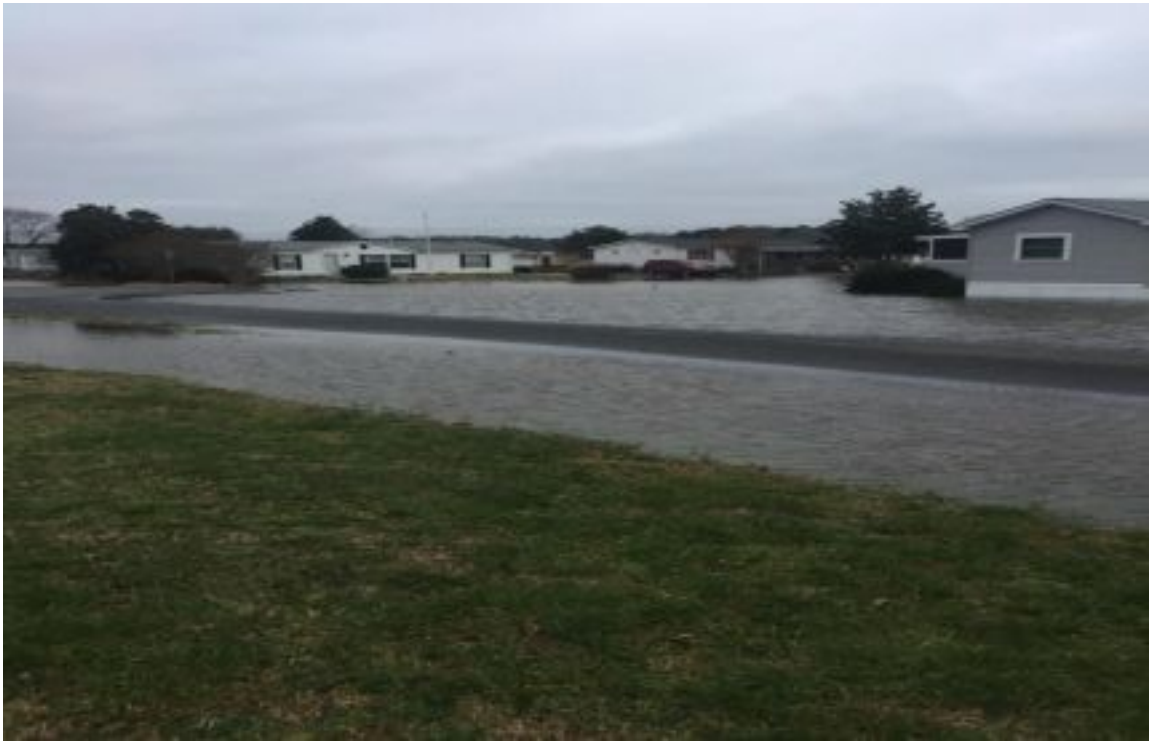


Evans Farm - Looking West from Railway Road

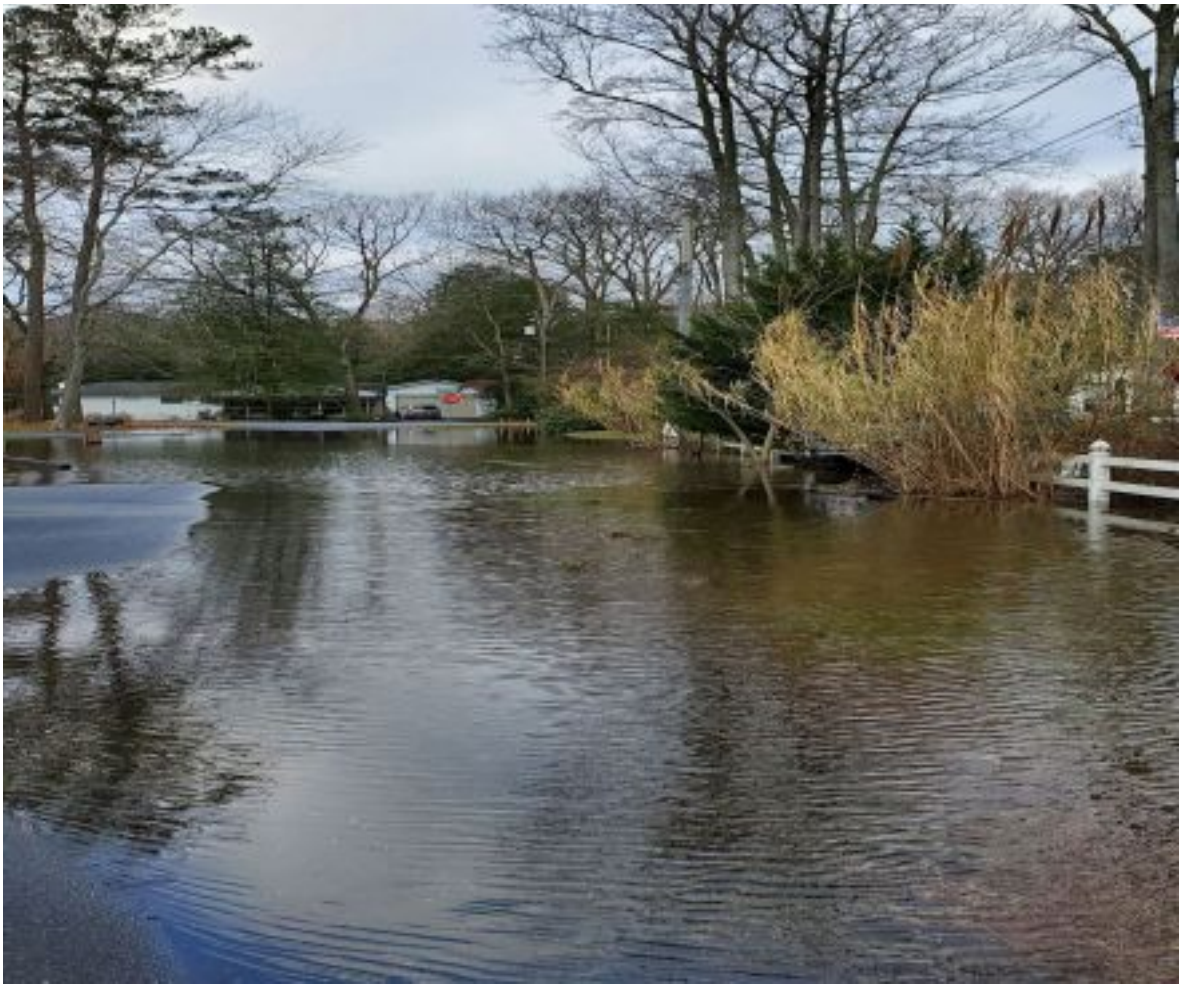
We have several drone pictures taken the first week of January 2021. Note that water is still covering several areas of Evans Farm, reinforcing the poor drainage that exists.

Evans Farm Looking West. Water on poor draining soil areas.

Most of these communities depend on existing old farm ditches to channel storm water to Whites Creek. Over the years, development has put a lot more pressure on the "once adequate farm ditch". This past summer of 2020, a county sponsored project in Banks Acres, was executed to clean out the ditch on Syracuse St. , excavate and replace old culvert piping and add rip rap at several intersections; in an effort to alleviate existing flooding problems. Unfortunately, Banks Acres flooded during 3 different storms in the month of December.



Intersection of Syracuse st and Trenton st in Banks Acres “post” ditch cleanout



Impassable Street in Banks Acres, Pine Street Looking towards Railway Road.

Concerns - Adverse impact to area Well Water

Several communities surrounding Evans Farm have private water wells to meet ALL of their potable water needs. Banks Acres is directly across Evans Farm and the majority of their 109+ single family homes are on private well water. During the December 16 rain event, some homes with above ground well heads came within inches of having stormwater contamination of their wells.
Northeast of the proposed Evans Farm property, is an area designated by the Federal Environment Protection Agency as a “Wellhead Protection Area”. It is the circled area in Blue. A Wellhead Protection Area is defined as the surface and subsurface area surrounding a public water supply well, through which contaminants are reasonably likely to move toward and reach the well. During the December 16 rainevent, floodwater reached the SE portion of this Protected Area.

Original 2009 Approved Plans

In the 2009 development plan for Evans Farm, (Conditional Use Plan drawings by Becker Morgan, Sheet #1 Proj. 2009014.00 5/1/09), the center of the development was designed as a large "water feature" with a dual purpose - aesthetics and self contained onsite management of all their stormwater needs. This area scales to approximate 8.5 acres and the plans were approved by the Planning and Zoning and

County Council. There is a small note that indicates a drain would be installed from this stormwater collection area to Old Mill Road, but no other mention of this is made and minutes from Council and Planning and Zoning continued to refer to the project as having "self contained" Stormwaters. It is also important to know that across from Evans Farm, on the NW corner of Old Mill Road and Whites Neck Road is a SIRB (Site Investigation Restoration Bureau, under the Division of Waste and Hazardous Substances) - Quillen Borrow Pit. Although a 2000 ruling was made that further work was not needed, inadvertently causing it to flood may cause other environmental problems.

Current 2019 Evan Farm Apartment Plans

The current August 19, 2019 Evans Farm Apartments plan (PP0001 for Sheets 1 and 3 and PP0002 for Sheet 2, Project PETIX19002) has not only changed the overall scope of the project from privately owned residence to apartments, but eliminated the center of the development's - "Self contained stormwater area". A new stormwater area is now shown on the northeast end of the development (scales to only 1.5 acres). It is interconnected to the small existing drainage ditch and pipe (which both empty into the Railway Road depressions). On Sheet 1, PP0001 this stormwater area is identified as 5.79 acres (See Site Data, Item #17). If properly scaled on Sheet 3, the area would extend south west to the backs of 5 proposed garage structures (GI, GJ, GK, GL, and GM). The length cannot be made longer because of physical land limitations with an existing wetland area and the proposed emergency access road.

There are 6 types of soil on the Evans Farm property. Most drain well except Ksa/Klej type soil, which is described as "... poorly drained transitional soil …". . The proposed location of the Stormwater area sits on top of Ksa/Klej type soil (tan color). Our aerial pictures taken almost a month after the December 16 rain event supports this, as the area is still under water, while other areas of Evans Farm are dry.

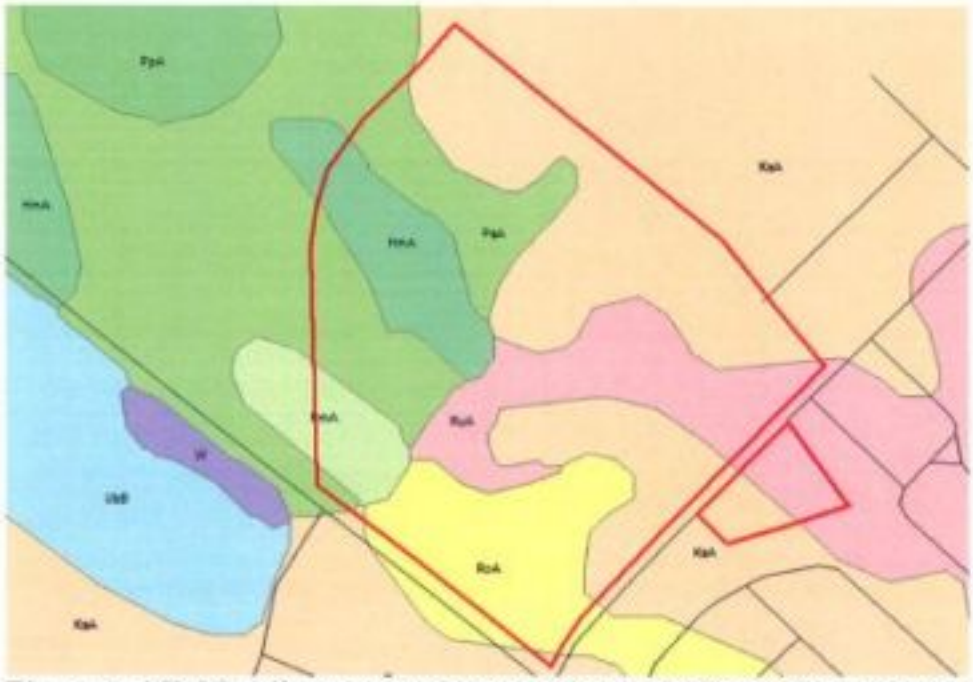


Figure 1: NRCS soil survey update mapping in the immediate vicinity of the Evans Farm

If we analyze the proposed addition of stormwater from Evans Farm Apartments to the local area: The amount of water needed to cover one acre to a depth of 1 inch is $^{6272640}/_{231}$ = 27154.3 gallons. Evans Farm main parcel is 48 acres. During the recent heavy rain event of December 16, Evans Farm was covered by rain water for 3 days. 2.1 inches of rain fell in the area. One inch of rainwater on 48 acres of land = 1,303,392 gallons of water. 2.1 inches = **2,737,123** gallons of water. Of the 2.737 million gallons of water on Evans Farm, the proposed plan will directly channel 19.5% of the rainwater to the 5.79 acre storm water area (impervious development acreage & drainage design). 19.5% equates to 533,739 gallons of rainwater. The 5.79 acres would already have 330,165 gallons of rainwater. In total, 863,904 gallons of rainwater will be in the designated stormwater area of Evans Farm Apartments and channeled to the local community by the existing drainage pipe and ditch. To envision how much water this represents, a typical 8 minute shower uses 17 gallons of water. A person could take showers for 139.2 years or that same amount of water would cover 31.8 acres of neighboring land **(In 'one' single rain event of 2.1 inches).** {Note: The original 2009 plans indicated 17% of the development was impervious due to construction plans. P&Z and Council comments were that the calculation were understated and recommended recalculation. I calculated 19.5% using the stated acreage for buildings, roads and garage structures, then divided by / total acreage of 50. If I used the 48 actual contiguous acres, it would yield a percentage slightly over 20%}

SUMMARY

In summary, the area around the proposed Evans Farm Apartments project cannot take any additional stormwaters from the land. Any planned additional use of existing drainage ditches or pipes would add to the current flooding conditions for all neighboring communities and down to White Creek Manor, which is at the point of drainage into Whites Creek. A flooding event over the Old Mill Rd. crossing at Whites Creek would be catastrophic to local travel.

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Background material

The Sussex Conservation District is the local delegated authority for the Delaware Sediment and Stormwater Regulations. A sediment and stormwater plan is required when disturbing 5,000 square feet or more. The District is responsible for reviewing plans for compliance with the Delaware Sediment and Stormwater Law and Regulations, performing construction and maintenance inspection, and providing technical assistance.

Agricultural and Soil Conservation; Drainage and Reclamation Lowlands

CHAPTER 40. Erosion and Sedimentation Control

§ 4001 Legislative findings and statement of policy.

(a) *Legislative findings.* — ***The General Assembly finds that erosion and sedimentation continue to present serious problems throughout the State, and that the removal of a stable ground cover in conjunction with the decrease in the infiltration capability of soils resulting from the creation of additional impervious areas such as roads and parking lots has accelerated the process of soil erosion and sediment deposition resulting in pollution of the waters of the State. This damages domestic, agricultural, industrial, recreational, fish and wildlife and other resource uses. The General Assembly further finds that accelerated stormwater runoff increases flood flows and velocities, contributes to erosion, sedimentation, and degradation of water quality, overtaxes the carrying capacity of streams and storm***

sewers, greatly increases the costs of public facilities in carrying and controlling stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, and threatens public health, welfare, and safety.

§ 4003 Duties of persons engaged in land disturbing activities.

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(a) After July 1, 1991, unless exempted, no person shall engage in land disturbing activities without submitting a sediment and stormwater management plan to the appropriate plan approval authority and obtaining a permit to proceed.

Has a stormwater management plan been submitted? If so, we need to review it before proceeding.

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"The purpose of this program is to protect the quality of public water supplies derived from public water wells by providing local governments with the knowledge and tools necessary to protect the land area surrounding those wells from activities or substances that might harm the quality or quantity of water derived from those wells. This purpose will be accomplished in part by the creation and implementation of a "Water Supply Protection Program," which incorporates the federal Wellhead Protection Program required by Congress in the 1986 Amendments to the federal Safe Drinking Water Act. This plan has been developed under the guidance of both the U.S. EPA and the State's Water Supply Protection Advisory Board (WSPAB). The assistance of these two organizations has been vital to the development of a meaningful and workable method for protecting the State's water supplies. "

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(1) For water quantity control, a system of vegetative, structural, and other measures that controls the volume and rate of stormwater runoff which may be caused by land disturbing controls adverse effects on water quality that may be caused by land disturbing activities upon activities upon the land; and

(2) For water quality control, a system of vegetative, structural, and other measures that the land.

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Minutes March 10, 2016 14 OTHER BUSINESS
The Village at Evans Pond – C/U #1849 Final Site Plan Ms. Cornwell advised the

Commission that this is a final site plan for the construction of seventeen (17) multi-family buildings for a total of 200 dwelling units. The property is zoned GR. The tax parcel is 134-12.00-74.00. The Planning Commission recommended approval of the Conditional Use at their meeting on November 10, 2010. The Sussex County Council granted approval for the Conditional Use for multi-family dwellings at their meeting on November 30, 2010. The Planning Commission granted preliminary site plan approval on March 22, 2012. The preliminary site plan included a mixture of 2 story and 3 story buildings. The final site plan is all 3 story buildings. The overall number of buildings was reduced from 23 buildings to 17 buildings due to the conversion to all 3 story buildings. The location of the amenities was relocated to be closer to the entrance of the development. The road layout has changed slightly. Staff is in receipt of all agency approvals. Motion by Mr. Johnson, seconded by Mr. Burton and carried unanimously to approve the Final Site Plan. Motion carried 4-0

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In 2010, when the original zoning request was submitted by Linder & Company, Change of Zone No. 1691 and Conditional Use No. 1849, they proposed townhomes, limited to 200 units. Discussed was their connection to Tidewater local sewer and water, "... that DelDOT will require multiple improvements to roadways and intersections… that the roadway improvements required by DelDOT to be built by the Applicant will cost in excess of $1,000,000.00…" and "... a large wet pond was proposed, located in the center of the development for enhancing the view from the units and for stormwater management and "that the design of the site will provide for all drainage to go to the pond..". Mention is made of 6 soil types and that no tax ditches were affected and that "it may not be necessary for off-site drainage improvements…". "...There were two non-tidal wetlands areas, ... that another area of non-tidal wetlands exists along a drainage ditch in the center portion…", "... the construction of 200 units on the westerly side of Railway Road will leave capacity for only a single family dwelling on the easterly side…" (sewer service). And that the Office of State Planning Coordination has viced no objections; that they will be in compliance with the requirements of 99-9C of the Code with no impact on wetlands, no impact on natural features, County sewer, public water, no impact on local facilities, amenities, and no anticipated impact on schools…". No local residents were in attendance at the Nov. 10th 2010 P&Z hearing (Bay Forest had less than 175 residents and Scissorbill Road was still under construction - (within the 200 ft. notification zone)). Motion was deferred.

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On Nov. 30th County Council met and reiterated were the selling points: the stormwater drainage pond in the center, that no disturbances would be made to the two wetland areas, that "...the project is consistent with the character of the neighborhood…".

There were no public comments in support of the project, but opposition from Bethany Bay and Sea Colony. Motions were made to defer C/Z 1691 and leave the record open for a report by Lawrence Lank and to defer C/U 1849 and passed.

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Article Coastal Point - Protect Local waterways

https://www.coastalpoint.com/opinion/letters/reader-urges-greater-efforts-to-protect local-waterways/article_ba5ea286-dd6c-11ea-846e-abdb1af1c0f3.html