

# Karins

Consulting Engineers

17 Polly Drummond Center • Suite 201 • Newark, DE 19711 • (302) 369-2900 • Fax (302) 369-2975

## and Associates

November 16, 2006

Office of Management and Budget  
State Planning Coordination  
Attn: Constance Holland, Director  
122 William Penn Street, Third Floor  
Dover, DE 19901

**Re: Watson Farm Plus # 2006-05-08**

Dear Ms. Holland,

This letter is in response to the Plus Comments dated June 9, 2006. The following are our responses to those comments:

### **Executive Summary**

#### **State Strategic/Project Location**

- No issue since there is no objection to the development proposal.

#### **Street Design and Transportation:**

- Traffic Impact Study is currently under way, scoping meeting has been held.
- Street E has been realigned to help manage potential speeding.
- Bicycle and pedestrian facilities will be designed along Clark Farm Road, Duck Creek Road and Joe Goldsborough Road.

#### **Natural and Cultural Resources**

- If any buildings are proposed to be demolished, DHCA will have the opportunity to document them. DHCA will also have the opportunity to examine other sites in the development.
- A wetland delineation has been completed by Atlantic Hydrologic, inc. No disturbance in Wetlands is proposed.
- The existing riparian buffer will remain; any clearing will be minimal and essential to the development only.
- The WRPA map does show a large area of the site being in an area of water recharge. There is also a large system of tile or underground drainage through out this area. This conflicts with recharge. The project is designed to remain 50% open or pervious. Stormwater Management will be designed to use Green Technologies to mitigate any potential problems with pollutants that may enter the ground water. If soils are suitable, infiltration will be encouraged, but only after filtering runoff over vegetated areas.

**Page 2**

**Watson Farm PLUS 2006-05-08**

**November 16, 2006**

- We have taken the recommendation of 20% impervious cover within the wellhead and will make all attempts to meet this recommendation.
- Tax ditch easements will be shown in the open space and right of ways will not encroach within private lots.
- Tax ditch right of ways will show up on all applicable plans and deeds and any maintenance will be coordinated with the respective Tax Ditch Organization.
- Drainage easement will be used where necessary and all catch basin located off street will be designed clear of obstructions.
- Our wetland consultant will further investigate the potential habitat near the proposed location of the stormwater management pond in the lower middle of Parcel B. However since it is the adjacent parcel that may have the potential habitat we do not foresee any issues.
- Comment noted about the requested timing of tree clearing. All efforts will be taken to adhere to the request.
- Request to realign cul-de sac has been reviewed and all efforts have been taken to minimize any tree clearing on Parcel E.

**Office of State Planning Coordination**

- Again comments refers to no objection to the proposal

**Division of Historical and Cultural Affairs**

- When the project is farther along in the process Faye Stocum will be contacted as requested in regards to the historical structures on site and any regulations which may govern the project and demolition.

**Department of Transportation**

1. Traffic Impact Study is under way and scoping meeting has been held to discuss study.
2. E Street has been realigned as requested to control speeding.
3. Bicycle and pedestrian facilities will be incorporated on Clark Farm Road, Duck Creek Road and Joe Goldsborough Road.
4. Mr. Lin will be contacted as requested.

**Department of Natural Resources and Environmental Control.**

**Green Infrastructure**

Sensitive natural resources will be protected as much as possible through appropriate site designs.

**Page 3**

**Watson Farm PLUS 2006-05-08**

**November 16, 2006**

**Soils**

Soils have been researched and we generally agree with assessment provided except that the site is not found in the Kent County Soil Survey but in the New Castle County Soil Survey, since the project is located in New Castle County not Kent County.

**Wetlands**

Wetland delineation has been completed by Atlantic Hydrologic, Inc.. No disturbance is proposed in Wetlands and therefore no permits are required. Also as recommended as much of the wooded buffer along Duck Creek will remain.

**Impervious Cover**

As many bmp's as possible will be used on the site to mitigate the effects of impervious cover on the site's storm water runoff.

**TMDLs**

The nutrient budget protocol has been run for the site and we are currently in compliance with TMDL's based on the Muderkill River (5/06) (as suggested by DNREC) since Duck TMDL's had not been established at that time.

**Water Resource Protection Areas**

We generally agree with the assessment and recommendations, except that the site is in New Castle County not Kent County. Numerous tile drains or underdrains traverse the site that realistically reduce the amount recharge that is actually occurring. The goal of the project is to protect as much as possible all natural resources. In regards to stormwater issues green technologies will be encouraged to promote recharge. 50 % open area is still the goal of the project to limit the effects of impervious area.

**Water Supply**

When the water supply is designed for the project we will coordinate all approvals with the Town and DNREC. All required permits will be filed for the water supply and any dewatering. If a well permit is required only licensed water well contractors and well drillers will be used.

**Sediment and Erosion Control/Stormwater Management**

We are aware that a this project will require an approved Sediment and Stormwater Plan and we generally agree with all requirements and Comments, except that the site is located in New Castle County and the Kent Conservation District does not have jurisdiction in incorporated areas of New Castle County. New Castle Conservation District has jurisdiction of all incorporated area within New Castle County, except for the City of Wilmington, City of Newark and Town of Middletown. See list of Delegated

**Page 4**

**Watson Farm PLUS 2006-05-08**

**November 16, 2006**

Agencies (attached). All applicable requirement in regards to the Delaware Sediment and Stormwater Regulations will be met.

**Drainage**

We are aware that this project is located within Smryna Landing I and Massey Church Tax Ditch. We have contacted the New Castle Conservation District and have secured copies of maps showing easements, and location of tax ditches and tile drains. Tax ditch and respective easement will be located off of proposed lot lines. If not we are aware that court order changes will be required. All proposed plans will be forwarded to the Tax Ditch organization through the New Castle Conservation District. Comments regarding rear yard drainage and catch basins will be taken into account as much as possible within the site design.

**Rare Species**

Our wetland consultant will further investigate the potential habitat near the proposed location of the stormwater management pond in the lower middle of Parcel B. However since it is the adjacent parcel that may have the potential habitat we do not foresee any issues. As stated in the comments if required based on the presence of bog turtles, the site will be redesigned to relocate the ponds, maintain the required buffer and install any required silt fence.

**Forest Preservation**

Tree Clearing recommendation understood and all efforts to meet suggested dates for clearing will be taken.

**Nuisance waterfowl**

All efforts will be taken not to attract nuisance waterfowl

**State Resource Area**

All effort will be taken as is shown on the plan to avoid wooded buffer areas and to minimize the affects of the cul-de-sac.

**Underground Storage Tanks**

If any underground storage tank or petroleum contaminated soils be found, the Tank Management Branch will be notified as soon as possible and any piping will be replaces as requested.

**Site investigation and restoration**

Recommendation for public water usage understood and any questions will be forwarded to Babtunde Asere.

**Solid Waste**

As recommended steps will be taken to limit the amount of construction waste produced.

**Air Quality**

Comments regarding air quality and pollutants are understood. The developer will use to the most practical extent possible to make the homes Energy Star qualified. Additionally the owner is researching geothermal and photovoltaic energy option but is not sure the cost benefit ratio would make it possible to utilize. Diesel vehicles are generally used during construction and the site will utilize mass transportation as much as possible.

**Fire Marshall**

- A. Fire Protection Water Requirements will be met as listed.
- B. Fire Protection features will be adhered to as listed.
- C. Accessibility will be met as listed.

**Gas Piping System Information**

- If any bulk fuel containers are to be located on site they will be shown.

**Required Notes**

- All required notes will be places on the plan as listed and we will meet with the State Marshall preliminarily to discuss the plan.

**Department of Agriculture**

- Comments understood about the importance in saving trees and preserving recharge areas.

**Right Tree for the Right Place**

- A registered Landscape Architect will prepare a landscape plan for the development.

**Native Landscapes**

- Natives species will be incorporated into the landscape design as much as possible

**Public Service Commission**

- Any expansion of Natural gas or installation of a closed propane system will fall within pipeline safety guidelines. As mentioned earlier the town in conjunction with the developer will apply for a certificate of public convenience and necessity to provide public water to the project.

**Delaware State Housing Authority**

- Comments understood about home pricing, and all efforts will be made to make homes affordable. The market, and development costs however dictate what the homes prices will be.

**Page 6**

**Watson Farm PLUS 2006-05-08**

**November 16, 2006**

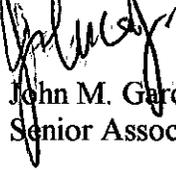
**Department of Education**

- The developer of project is aware of the capacity issue with the school district and is currently determining what is the best course of action at this time.

Please do not hesitate to contact me if you have any questions with this matter

Sincerely,

Karins and Associates



John M. Garcia, Jr., PE  
Senior Associate

Cc: Dave Hugg, Town of Smryna  
Sabine Watson, PE KCI

**Division of Soil  
& Water  
Conservation**



## List of Delegated Agencies

The following agencies have delegation of Sediment and Stormwater Program elements consisting of plan review construction inspection, and maintenance inspection for their geographic boundaries.

### 1. State Agencies

- a. **Department of Natural Resources and Environmental Control**  
 Division of Soil and Water Conservation  
 Sediment and Stormwater Program  
 89 Kings Hwy  
 Dover, DE 19901  
 (302) 739-9921

Responsible for all aspects of administration of the state sediment and stormwater management program under the Delaware Sediment and Stormwater Law and Regulations. Responsible for plan review and inspection of State and Federal Projects

- b. **Department of Transportation**  
 Highway Operations  
 Field Services  
 P.O. Box 778  
 Dover, DE 19903  
 (302) 739-4327

Delegated Area: DelDot Construction

### 2. New Castle County

- a. **New Castle County Dept. of Land Use**  
 Site Management Division  
 87 Reads Way  
 Corporate Commons  
 New Castle, DE 19720  
 (302) 395-5400

Delegated Area: All Unincorporated Areas of New Castle County

- b. **New Castle Conservation District**  
 2430 Old County Road  
 Newark, DE 19702

Delegated Area: All Incorporated Areas of New Castle County (except Newark, Wilmington and Mid

- c. **City of Newark**  
 Public Works Department  
 220 Elkton Road

P.O. Box 390  
Newark, DE 19713-2839  
(302) 366-7040

Delegated Area: City of Newark

- d. **City of Wilmington**  
Dept. of Licensing and Inspections  
800 North French St.  
Wilmington, DE 19801  
(302) 571-4363

Delegated Area: City of Wilmington

- e. **Town of Middletown**  
216 N. Broad Street  
Middletown, DE 19709  
Plan Review: (302) 378-1171  
Inspections: (302) 378-5141

Delegated Area: Town of Middletown

### 3. Kent County

Kent Conservation District  
800 Bay Road  
Suite 2  
Dover, DE 19901  
302-741-2600 Ext.3

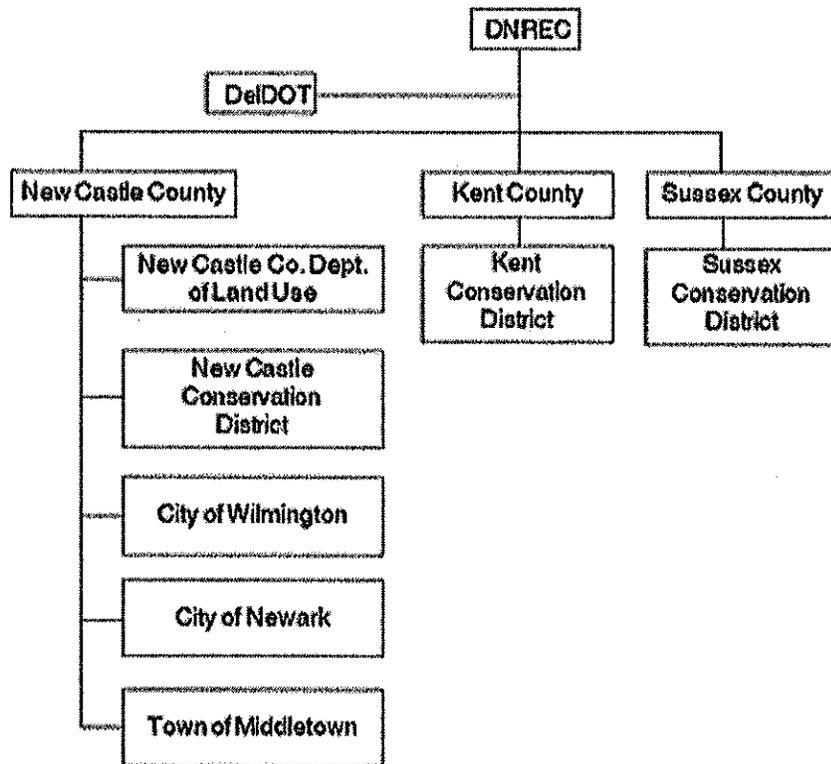
Delegated Area: Kent County

### 4. Sussex County

Sussex Conservation District  
21 Shortly Rd.  
Georgetown, DE 19947  
(302) 856-7219

Delegated Area: Sussex County

### DELEGATION

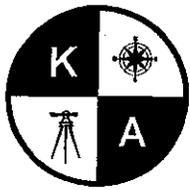


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| [Delaware's Home Page](#) | [Econ Development](#) | [Tourism](#) |

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Natural Resources and Environmental Control  
89 Kings Hwy  
Dover, DE 19901

Comments? E-mail the **Webmaster**  
Last Update: 08/09/2005 12:57:51



# Karins and Associates

Engineers • Planners • Surveyors

17 Polly Drummond Center, Suite 201, Newark, Delaware 19711 • (302) 369-2900 • Fax (302) 369-2975

301 West DuPont Highway, Millsboro, Delaware 19966 • (302) 934-9656 • Fax (302) 934-9679

February 15, 2008

Office of Management and Budget  
State Planning Coordination  
Attn: Constance Holland, Director  
122 William Penn Street, Third Floor  
Dover, DE 19901

**Re: Watson Farm Plus # 2006-05-08  
Karins Project # 1939**

Dear Ms. Holland,

This letter is in response to the Plus Comments dated January 10, 2007. The following are our responses to those comments:

## **1. Sediment and Stormwater Management**

The Sediment and Stormwater Management Plan for the project will be submitted to the Kent Conservation District (KCD). We have had preliminary meetings with KCD involving the project.

## **2. Nuisance Waterfowl**

We will follow DNREC recommendations in regards to native plantings and buffering around any proposed ponds as is practical. We are well aware of the damage waterfowl can do. As we are all aware native plantings such tall grasses wildflowers, shrubs and trees can decrease or minimize nuisance waterfowl by providing habitat for their natural predators. We have to be careful not to cause any property management issues with Smyrna in regards to high un-mowed grasses. I have personally seen nuisance waterfowl controlled by using a well marked string 6" to 12" high staked in around the pond perimeter. Waterfowl, geese in general do not like walk out of ponds and have to "duck" under or "hop" over the obstruction. In time this allows for natural or emergent vegetation to develop which in turn acts as the obstruction. Again from our previous response we understand the issue with nuisance waterfowl and we will design the Stormwater facilities per all-applicable codes and regulations and work with the Kent Conservation District in its design.



*"Better Communities through Better Engineering"*  
[www.karinsengineering.com](http://www.karinsengineering.com)





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Page 2  
Constance Holland  
February 15, 2008  
Watson Farm

### 3. Wetlands

A wetland delineation plan is enclosed. It details not only the fresh water wetlands but also the tidal wetland locations. A preliminary subdivision plan is also enclosed which details the limits of disturbance and how many wooded buffers will remain. There is very little clearing that is proposed. No disturbance is proposed in the tidal wetland. There will be stormwater outfalls near the wetlands. These outfalls will be protected with required Erosion and Sediment Control Practices.

4. The only accurate way to measure impervious cover is to conduct an As-built survey when construction is complete. Professionally I can not certify to a definitive impervious cover when exact home types will be picked by the prospective home buyers in the future or if they will place sheds, patios, pools or other impervious surfaces on their properties. I can provide a range based on zoning and what is allowed by code. I can provide an estimate on impervious cover based on lot sizes as is accepted by DNREC. Based on that we have recalculated our estimate for the impervious cover for the site to be 29 %, which takes into account from the preliminary plan roads, sidewalks, driveways and rooftops. Again as we stated we have met preliminarily with the Kent Conservation District on what specific stormwater practices we will be using. We will be utilizing ponds in conjunction with biofiltration to manage stormwater runoff. We will be forwarding copies of the design to KCI, the Town Engineer for their information as well.

### 5. TMDL's

The Smyrna River TMDL protocol is enclosed.

### 6. Bog Turtles

A bog turtle study has been completed and no evidence of bog turtles were found please see enclosed report and letter from the Natural Heritage and Endangered Species section.

Please do not hesitate to contact me if you have any questions with this matter

Sincerely,

Karins and Associates



John M. Garcia, Jr., PE  
Senior Associate

Cc: Dave Hugg, Town of Smyrna  
Sabine Watson, PE KCI



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL  
DIVISION OF FISH & WILDLIFE  
NATURAL HERITAGE & ENDANGERED SPECIES  
4876 HAY POINT LANDING ROAD  
SMYRNA, DELAWARE 19877

TELEPHONE: (302) 653-2880  
FAX: (302) 653-3431

November 19, 2007

Shaina Phillips  
JCM Environmental  
100 Lake Drive, Suite 3  
Newark, DE 19702

RE: *Bog Turtle Phase I Report for Watson Property (proposed development)*  
*Tax Parcels 28-003.00-001, 28-003.00-002, 28-004.001 & 002, 28-001.00-003*  
Smyrna, DE

Dear Ms. Phillips:

We have reviewed the Phase I bog turtle report that was submitted by your office. The report indicated that no habitat that would support the federally threatened bog turtle (*Glyptemys muhlbergii*) was found. Therefore, at this time, you have satisfied the Delaware Division of Fish Wildlife's Endangered Species Review Requirements.

If you require further information, please contact our Endangered Species Biologist, Holly Niederriter, at (302) 653-2880.

We are continually updating records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Sincerely,

  
Edna J. Stetzar  
Biologist/Environmental Review Coordinator

CC: Andy Moser, Endangered Species Biologist, Chesapeake Bay Field Office, USFWS

# Nutrient Loading Assessment Protocol RESULTS

Please answer the following questions. This Protocol is intended to illustrate whether proposed future land use will reduce nutrient loads when compared to the base period for the applicable TMDL. The protocol works on a parcel basis and does not take into account cumulative impacts. It serves as an indicator to the county and municipal agencies as to the impact of the proposed development on water quality and provides potential ways to mitigate the project's impact. This Protocol is a tool. It does not suggest project approval. Therefore, the applicant should be aware that final project approval is contingent upon the satisfactory completion of all County, Municipal, State and/or Federal regulatory requirements.

Parcel Information	TMDL Required Nutrient Reductions	Wastewater Treatment	Density	Urban Nutrient Load from Impervious Cover	Managed Turf Areas	Unmanaged ("Natural") Areas	Stormwater Treatment BMPs and Reduction	Nutrient Load Assessment for																																																		
<p><b>Parcel Information</b></p> <p>The proposed development is in the TMDL area established for the parcel.</p> <p>The total acreage of the proposed development is: <b>272.74</b> acres.</p> <p>Your proposed development is in the: <b>Smyrna</b> watershed.</p>	<p><b>TMDL Required Nutrient Reductions</b></p> <p>TN Reduction (percent): <b>40</b></p> <p>TP Reduction (percent): <b>40</b></p>	<p><b>Wastewater Treatment</b></p> <p>Connect to Kent County Treatment Facility: <b>0.00</b></p>	<p><b>Density</b></p> <p>Your proposed Low Density subdivision has a density of 2.17 dwellings units per acre.</p> <p>The development's density with wetlands removed from calculation is 2.40 dwelling units per acre.</p>	<p><b>Urban Load from Impervious Cover</b></p> <p>Typical load for this development of Low Density with 29.00 percent impervious cover which equates to 69.95 acres of impervious cover for this development: <b>3.15</b></p>	<p><b>Managed Turf Areas</b></p> <p><b>0.00</b></p>	<p><b>Unmanaged ("Natural") Areas</b></p> <p><b>0.90</b></p>	<p><b>Stormwater Treatment BMPs and Reduction</b></p> <table border="1"> <thead> <tr> <th>BMP</th> <th>TN Reduction (lb/year)</th> <th>TP Reduction (lb/year)</th> <th>Included in Series calculation</th> <th>Total Reduction for Independent BMPs</th> </tr> </thead> <tbody> <tr> <td>TN Reduction (lb/year)</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>TP Reduction (lb/year)</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td><b>Total Reduction for the BMPs in Series</b></td> <td><b>0.00</b></td> <td><b>0.00</b></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><b>0.00</b></td> </tr> <tr> <td><b>Total Reduction for the BMPs in Series</b></td> <td><b>0.00</b></td> <td><b>0.00</b></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><b>0.00</b></td> </tr> </tbody> </table> <p>Typical load reduction that may be achieved if using BMPs in treatment trains (Series):</p> <p>Your proposed buffers with an average removal effectiveness of 68.3 will reduce the nutrient load by:</p> <p>Stormwater BMP and/or Buffer Reductions given for this development:</p> <p><b>12.78</b> TN Reduction (lb/day)</p> <p><b>0.93</b> TP Reduction (lb/day)</p>	BMP	TN Reduction (lb/year)	TP Reduction (lb/year)	Included in Series calculation	Total Reduction for Independent BMPs	TN Reduction (lb/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TP Reduction (lb/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>Total Reduction for the BMPs in Series</b>	<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<b>Total Reduction for the BMPs in Series</b>	<b>0.00</b>	<b>0.00</b>							<b>0.00</b>	<p><b>Nutrient Load Assessment for</b></p> <p>The PRE-DEVELOPMENT nutrient load for this parcel in the Smyrna watershed is:</p> <p><b>3.63</b> TN (lb/day)</p> <p><b>0.18</b> TP (lb/day)</p> <p>Based on the TMDL, the parcel must reduce its nutrient loads to:</p> <p><b>2.20</b> TN (lb/day)</p> <p><b>0.11</b> TP (lb/day)</p> <p>The land use nutrient load from proposed project due to land use conversion. Wastewater nutrient load is not included in this figure:</p> <p><b>9.28</b> TN (lb/day)</p> <p><b>0.87</b> TP (lb/day)</p> <p>The proposed project nutrient load with wastewater load added and no BMPs installed:</p> <p><b>9.28</b> TN (lb/day)</p> <p><b>0.87</b> TP (lb/day)</p> <p>FGS DEVELOPMENT NUTRIENT LOAD with Wastewater treatment and Stormwater BMPs:</p> <p><b>0.40</b> TN (lb/day)</p> <p><b>0.01</b> TP (lb/day)</p> <p>Percent of project's nutrient load due to wastewater systems. (In-Field Lysimeters are the only way to quantify wastewater nutrient loads to groundwater!)</p>					
BMP	TN Reduction (lb/year)	TP Reduction (lb/year)	Included in Series calculation	Included in Series calculation	Included in Series calculation	Included in Series calculation	Included in Series calculation	Included in Series calculation	Total Reduction for Independent BMPs																																																	
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## Nutrient Loading Assessment Protocol Work Sheet (Version July 15, 2007)

Please answer the following questions. This Protocol is intended to illustrate whether proposed future land use will reduce nutrient loads when compared to the base period for the applicable TMDL. The protocol works on a parcel basis and does not take into account cumulative impacts. It serves as an indicator to the county and municipal agencies as to the impact of the proposed development on water quality and provides potential ways to mitigate the project's impact. This Protocol is a tool, it does not suggest project approval. Therefore, the applicant should be aware that final project approval is contingent upon the satisfactory completion of all County, Municipal, State and/or Federal regulatory requirements. Enter "0" if the question does not apply.

1	What is the name of your project?	Watson Farms		
2	What is the project area's tax parcel number(s)?	28-003.00-001	None of the 1TD#	
3	Which watershed is the parcel located in? (If unsure go to Map link worksheet.)	Smyrna		
PLUS project number?		2005-05-08		
What is/are the pre-development land use(s) on the proposed project parcel?				
4	4a. Is this project a redevelopment of a golf course?	no	Ok	
	4b. What is the total acreage of the parcel?	272.74		
	4c. How many acres are Agricultural?	234.45		
	4.d How many acres of agricultural land had routine application of chicken manure?	234.45		
	4.e How many acres of constructed agricultural buffers are on the land?	0.00		
		0		
		0		
	4h. How many acres are already developed (urban)?	4.00		
	4i. How many acres are Forest?	8.57		
	4j. How many acres of forest are also nontidal wetlands?	0.00		
	4k. How many acres of wetlands are on the parcel?	25.72		
	4.l Acres of tidal wetlands	20.80		
	4.m Acres of non-tidal wetlands	4.92		
	4n. How many acres of Grassland are on the parcel (including buffers)?	0.00		
	4o. How many acres of Brushland are on the parcel?	0.00		
4p. Are there any Gravel pits? if so how many acres?	0.00			
Please provide information on the PROPOSED DEVELOPMENT land uses.				
	0.00	acres		
5	5a. How many acres are you proposing to disturb?	190.00		
	5b. Do you have an estimate of percent of impervious cover?	yes		
	5c. What is that percentage?	29.0		
6	6a. How many acres of wetlands are removed in this proposed project?	0.00	ok	
	6b. Tidal wetlands removed?	0.00		
	6c. Non-Tidal removed?	0.00		
	These many acres of forest have been removed.			0.00
	6d. Acres that will not be developed or will remain in their natural state.	43.96		
		0.00		
	6f. How many of the Upland Forested acres will remain?	8.57		
	Forested wetlands	0.00		
	Tidal wetlands	20.80		
	non-tidal wetlands which are not forested	4.920		
Acres of wetlands that will not be disturbed	25.72			
6g. Are any lands going to be replanted into Forests?	0			
7a. How many acres will be mitigated as a result of wetlands removal?	0.00	OK		
Acreage available for development.	228.78			
N/A	0.00			
		acres		
8	8a. How many acres will be used for residential or commercial purposes including right of ways?	228.78	Acres	dwelling units
	8b. How many dwelling units are being proposed for this development?	593.00		593
	8.c How many acres and dwelling units are allocated for all single family units?	190.00		460
	8d. How many acres and dwelling units are allocated for all Multi-family units?	38.78		133
	8e. How many acres will be developed for Commercial uses?	0.00	ok	
	Acreage for Clubhouse or Conference Center	0.00		
	Acreage for Retail	0.00		
	8f. How many acres will be used for active recreational facilities (i.e. pool, tennis/basketball courts, bike path, etc.)	0.00		
	Acres of impervious cover resulting from this development	66.35		
	Total developed acres with impervious area	228.78		
Undeveloped Acreage	43.96			
8g. Number of open space acres that will be managed/manicured (parks, lawns, athletic fields, playgrounds, community open spaces, excluding golf courses) etc)?	0.00	OK		
8h. Will this development have a Golf Course, if so how many acres?	0.00			
Total acreage in development	272.74			
9a. Are you going to use buffers in this development?	(yes/no)	yes		
9b. What type of buffer grass or forested?		Both		

	9c. What is the average width of the buffer?		75		
	9d. How many linear feet of buffers are you planning?		5615		
10	10a. Are stormwater BMPs going to be used independently, in series, or both implies some areas will have individual Stormwater BMPs and other areas will have stormwater BMPs in a treatment train?		Series	4	
	10b. How many of BMPs will be used on the site?		1		
		Put '0' in the column if BMP is a Series otherwise a '1'.	10c. Stormwater BMPs (For independent BMPs used the actual acreage treated and for BMPs used in a treatment train (Series) calculate the total acreage treated by the train. For Combination indicate the acres treated by individual BMPs and the acreage treated by the BMP used in Series. Sum of acreage treated by all the BMPs should equal acreage area disturbed in question 5.)		Total treatment acres for each BMP
	4	0	BMP 1	Biofiltration/bioswales 272	
	4	0	0	Biofiltration/bioswales 0	
	4	0	0	Infiltration systems 0	
	4	0	0	Biofiltration/bioswales 0	
	4	0	0	Infiltration systems 0	
	4	0	0	Biofiltration/bioswales 0	
	4	0	0	Infiltration systems 0	
	11a. How will your wastewater be handled?	Connect to Kent County Treatment Facility			
	11b. Do you have an estimated wastewater flow for this project?		265,200		
			0		
12	11d. Will any septic systems be eliminated due to sewerage or by community wastewater system being developed for the project? (yes/no)		yes		
	11e. How many septic systems will be eliminated?		30		
	11f. Are the eliminated systems going to another waste water system?		no		

Also more than 1 BMP

Apply filter related BMP