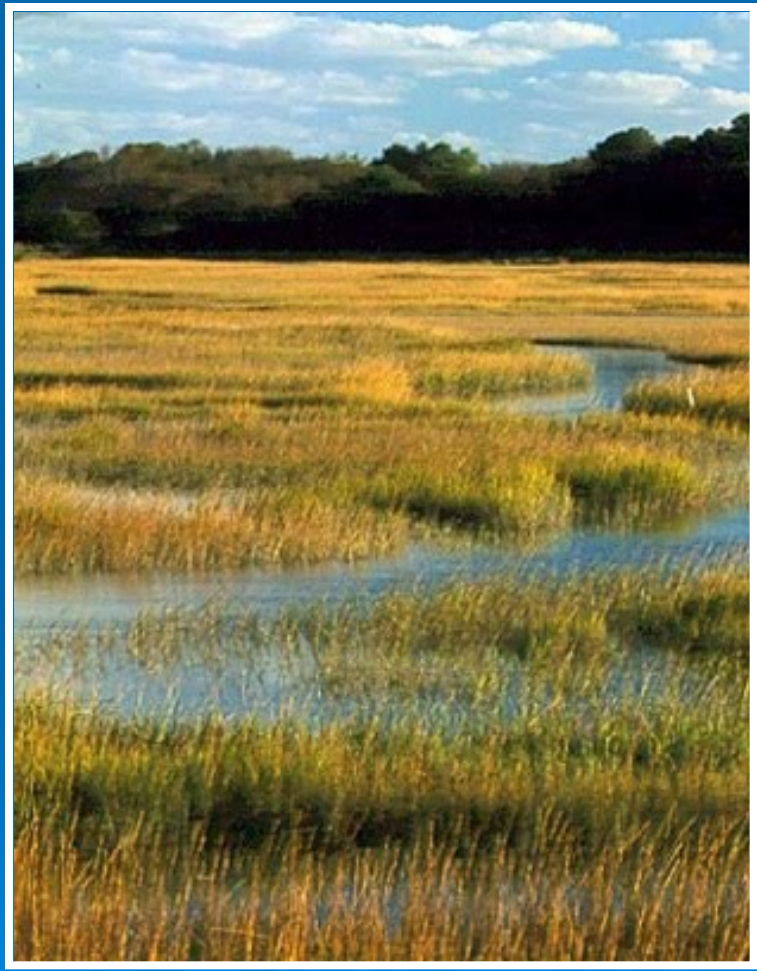
Overview of the Critical Area Act

State Highway Administration Training

July 23, 2013

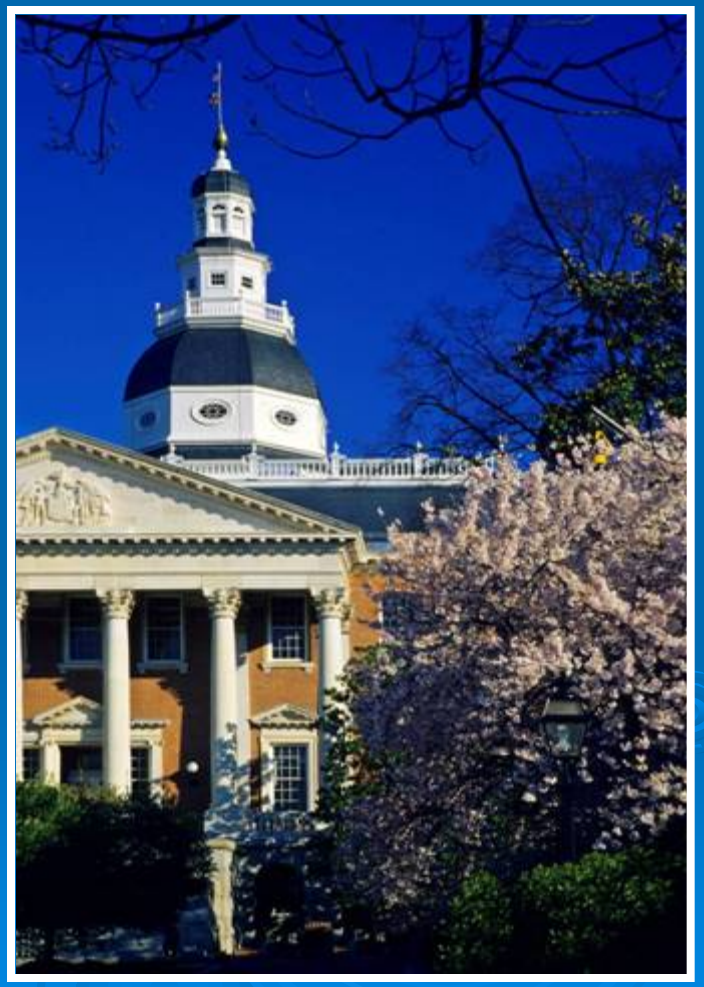
What Is the Critical Area Program?

- Land use and natural resource management program
- Integrated with local planning processes and procedures
- Unique State and local partnership
- Affects designated and mapped areas only
- Some areas formally excluded



Critical Area Program History

- Based on Chesapeake Bay Critical Area Act passed in 1984
- Resulted from acknowledging that the Bay was in a “state of decline”
- Attributed to water quality and habitat destruction associated with land use and development activity
- Realization that a “new strategy’ was needed to restore and protect Maryland’s water resources



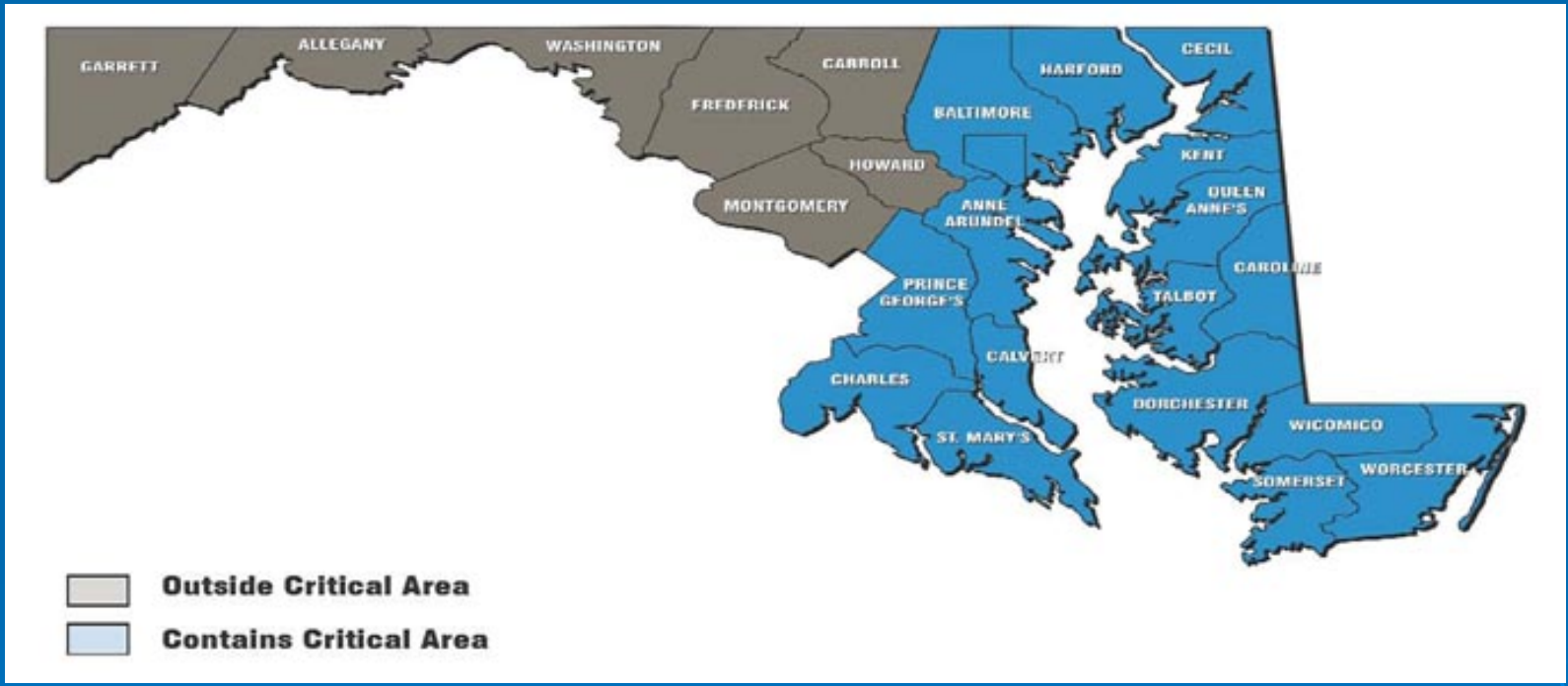
Critical Area Program
Three Goals

- Minimize adverse impacts to water quality from run-off
- Conserve fish, wildlife, and plant habitat
- Establish land use policies that accommodate growth but also address the fact that the number, movement, and activities of people in the Critical Area can have adverse environmental impacts

Where Is the Critical Area?

- All waters of the Chesapeake Bay, the Atlantic Coastal Bays, and their tributaries to the head of tide
- All land under these waters
- All land within 1,000 feet of the landward edge of tidal waters and tidal wetlands
- Approximately 11% of the State

Critical Area

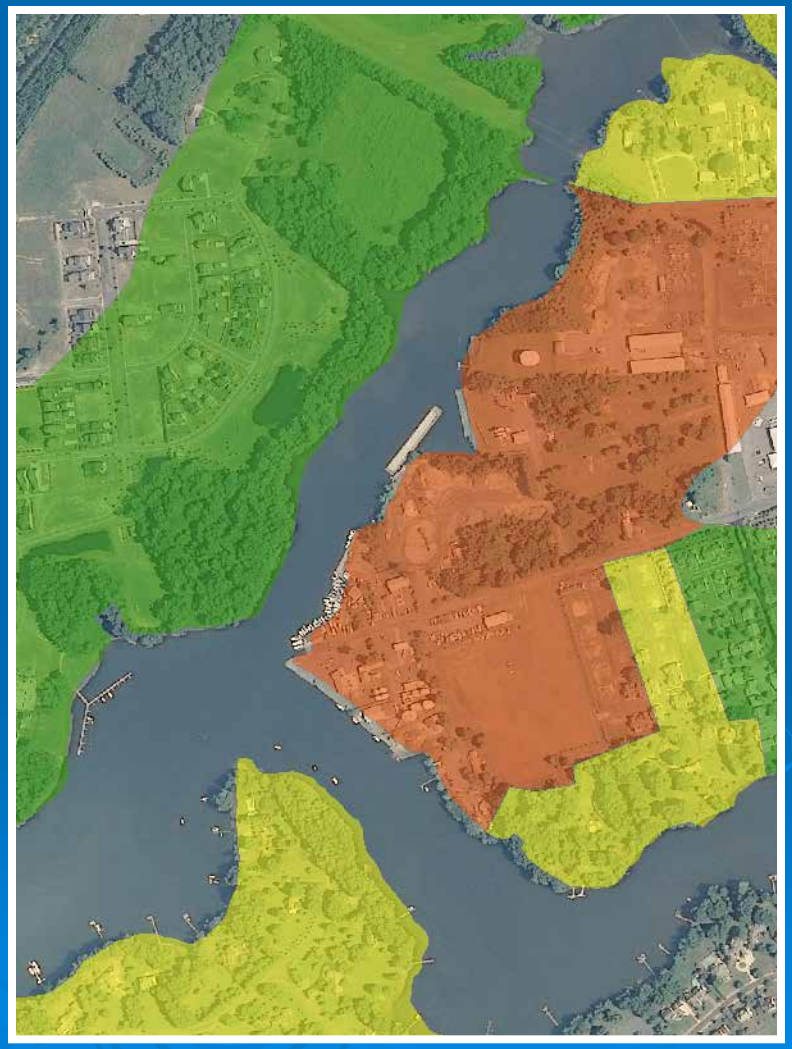


How Does the Program Work?

- State Law and regulations require each affected jurisdiction to have a Critical Area program
- Local program incorporated into local zoning code
- Project review, permitting, and enforcement is through local planning and zoning
- CAC, State agency, provides oversight, technical assistance, supplemental review
- CAC also reviews and approves projects on State-owned lands

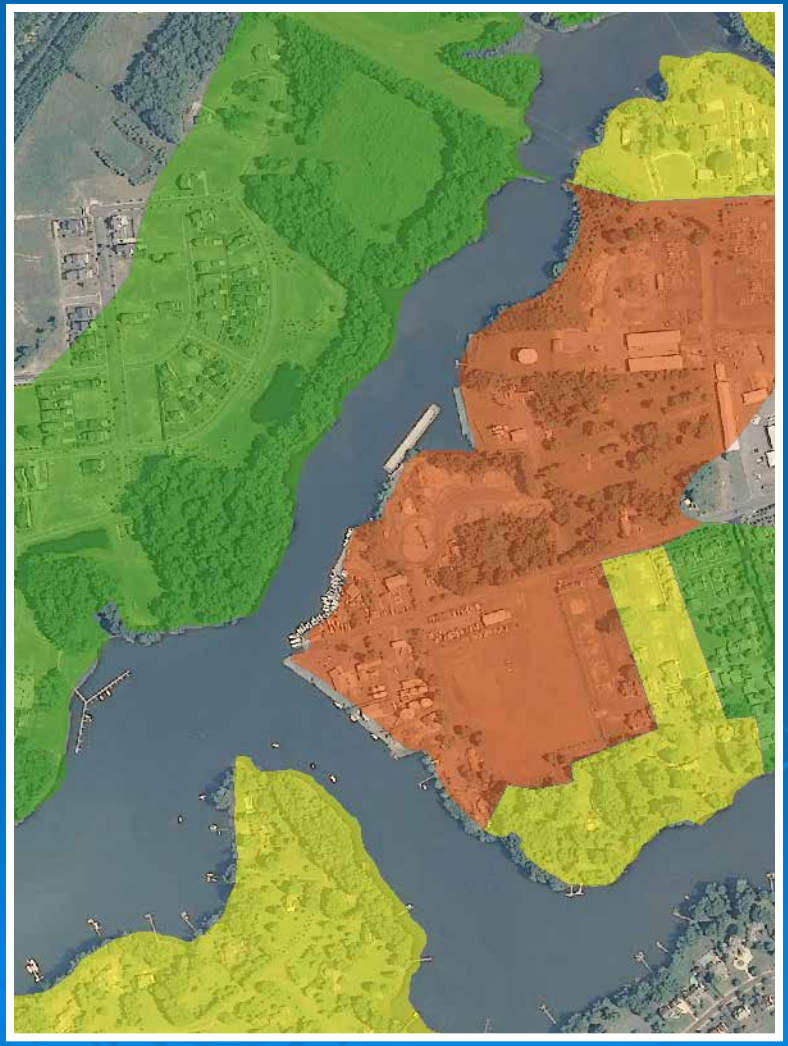
Overlay Zones Used to Implement

- Critical Area boundary drawn 1,000’ from tidal waters and tidal wetlands
- Land within boundary classified based on land use at time of program adoption
- IDA – Intensely Developed Area
- LDA – Limited Development Area
- RCA – Resource Conservation Area



Overlay Zones Used to Implement

- State-owned lands use different designations
  - Area Intensely Developed
  - Area Not Intensely Developed



Role of the Commission …

- **Review and approve all State-sponsored projects and projects on State land in the CA**
- Review and approve all local Critical Area ordinance updates and changes
- Review and approve all changes to Critical Area Maps
- Review and approve growth allocation requests
- Review and approves all proposed regulations prior to submittal to AELR Committee
- Review and approve local government projects of major significance

Critical Area Commission

- Created by Critical Area Act
- 29 voting members appointed by the Governor
  - Full time Chair
  - 13 elected or appointed officials from counties and municipalities
  - 8 members representing diverse interests
  - 7 members from State agencies (MDOT, MDA, DBED, DHCD, MDE, DNR, MDP)
- Terms are four years

Critical Area Commission Staff

- Separate from Department of Natural Resources (DNR)
- Administrative functions through DNR
- Provide support for the Commission
  - Prepare staff reports
  - Organize public hearings
  - Provide training
  - Communicate on important local or agency issues
- Review and comment on specific types of local projects
- Provide technical assistance, training, support to local government and State agency staff
- Interact with the public

Environmental Site Design In the Critical Area

Nick Kelly
Critical Area Commission
July 23, 2013

ESD in the Critical Area

- Background
- New standards and means of compliance
- Guidance document
- Spreadsheet tool
- Next steps

The Campbell Foundation

CHESAPEAKE STORMWATER NETWORK

CENTER FOR WATERSHED PROTECTION

Why Require Additional Analysis in the Critical Area?

- Despite several decades of stormwater management regulation, stormwater is the fastest growing nutrient source in the Bay watershed
- Recent research has conclusively demonstrated that both the amount of development within a watershed and its proximity to an estuary or wetlands contribute to the condition of its benthic, fish and bird communities

The 10% Rule

- There has been a stormwater management requirement specific to the Critical Area IDA since 1986
- Known as the “10% Rule” – the provision requires post-development water quality coming from a particular site to be 10% better than it was prior to development or redevelopment
- Water quality is estimated based on site imperviousness before and after development
- Phosphorus is used as the “keystone” pollutant

Previous 10% Phosphorus Worksheet

Worksheet A: Standard Application Process

Calculating Pollutant Removal Requirements[1]

Step 1: Calculate Existing and Proposed Site Imperviousness

A. Calculate Percent Imperviousness

1) Site Area within the Critical Area IDA, A = _____ acres

2) Site Impervious Surface Area, Existing and Proposed, (See Table 4.1 for details)

	(a) Existing (acres)	(b) Proposed (acres)
Roads		
Parking lots		
Driveways		
Sidewalks/paths		
Rooftops		
Decks		
Swimming pools/ponds		
Other		
Impervious Surface Area		

3) Imperviousness (I)

Existing Imperviousness, I_{pre} = Impervious Surface Area / Site Area
= (Step 2a) / (Step 1)
= (_____) / (_____)
= _____ %

C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l
A = Area of the site within the Critical Area IDA (acres)
8.16 = Includes regional constants and unit conversion factors

Step 4: Calculate the Pollutant Removal Requirement (RR)

RR = L_{post} - (0.9) (L_{pre})

= (_____) - (0.9) (_____)

= _____ lbs/year of total phosphorus

Where:

RR = Pollutant removal requirement (lbs/year)
L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)
L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)

ESD Phosphorus Standard For New Development

- Design for Phosphorus Removal
  - Maximum acceptable annual phosphorus load of 0.3 pounds per acre – the same as "woods in good condition"
    - Previously was 0.5 pounds per acre
  - For new development, the standard of "woods in good condition" will be met from both a hydrological standpoint as well as a nutrient standpoint
- Meets Maryland water quality standards
- Based on the Bay-wide TMDL

ESD Phosphorus Standard For Redevelopment

- Updating definition of “redevelopment” to match MDE regulations
- If site exceeds 40% imperviousness prior to development – the redevelopment standard will apply
- The removal requirement for redevelopment will be a reduction in the pre-development phosphorus load by 25%
- While this is a higher standard than the existing 10% Rule, the increased requirement corresponds to the recent change to MDE’s redevelopment standard (treating 50% of existing imperviousness rather than 20%)

Hydrologic Soil Groups

- Site analysis of pre-development hydrologic soil groups
- Soil properties govern which ESD practices are feasible at a given site, and can strongly influence the phosphorus removal rate they can achieve
- To help address the difficulty of poor soils (C/D) within the Critical Area, guidance will include a specification for soil restoration that can be used to increase removal efficiencies

Guidance Document

- ESD practice recommendations to withstand the conditions of the MD Coastal Plain (CSN, 2008)
- Addresses potential impact of sea level rise on stormwater infrastructure
- Clarifies the use of “direct tidal discharge” in addressing volume requirements
- Rules for stormwater related Buffer disturbance
- Critical Area offset credits:
  - Reforestation
  - Soil restoration
- New offset fee rate - $32,500/lb
- Guidance for setting up local offset fee programs

Photo by Gwynne Schultz, Maryland DNR

Not Just Areas of Intense Development Anymore?

- While not immediately planned, the phosphorus standard may be considered for the entire Critical Area
  - Information will be gathered based on future review of IDA/Areas of Intense Development projects and a decision will be made
- Similarly, if the spreadsheet tool is used and it becomes evident that the Phosphorus standard is always met by ESD to the MEP, then an assessment will be done to explore eliminating the requirement

New! ESD to the MEP Worksheet

- Allows tracking of both phosphorus removal and environmental site design
- Enables designers to find most cost-effective combination of ESD practices that comply with both laws
- Replaces paper worksheets!

Two Track Review Process

- The guidance and spreadsheet presented today apply to larger (i.e., > 5000 sq. ft.) development projects
- Another guidance document is being developed to streamline review of small projects that otherwise are not required to meet ESD to the MEP but are required to meet the Phosphorus standard in the Critical Area

Photo courtesy of Blue Water Baltimore

Goals of Using the Spreadsheet

- "One spreadsheet to rule them all"
  - Conforms to the methods and equations prescribed for ESD to the MEP compliance (MDE, 2009)
  - Uses the same nomenclature and practice names as MDE
  - Saves time for engineers, reviewers, and applicants
- Refined from 2011 Draft (Thanks CSN, MDE, and CWP!)

Maximizing Phosphorus Removal

- Removal efficiencies are provided for all ESD practices using research provided by the Center for Watershed Protection
- Not all ESD practices are created equally from a nutrient removal standpoint
- Efficiencies vary from a low of 20% to a high of 80%
- Analysis for Phosphorus will encourage designers to use more effective practices on a site-by-site basis

Photo courtesy of CSN

Volume Treated Helps

- The spreadsheet will automatically compute an increase in BMP efficiency once the rainfall treated exceeds 1 inch.
- It will reach an efficiency maximum at treatment of 2.7 inches of rainfall (similar to MDE ESD credit)
- Similarly, the spreadsheet will reduce the efficiency if the BMP is undersized

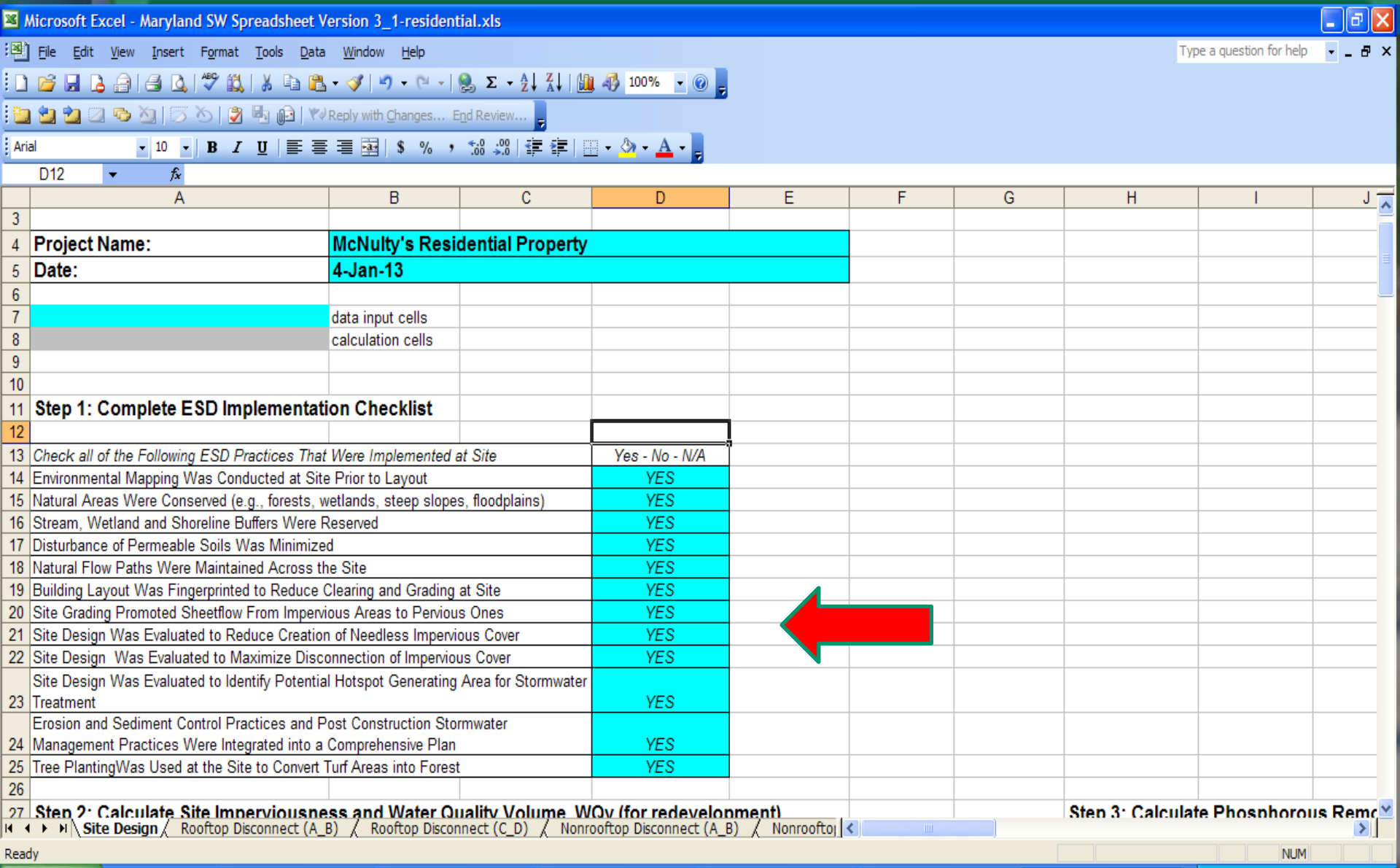
Photo courtesy of Robert Dexter

New Draft Spreadsheet

- Multiple tabs - One for each Best Management Practice
  - Allows for multiples of the same BMP
- Allows for practice-specific parameters (surface area, ponding depth, media depth, etc.)
- Green roofs have a phosphorus removal efficiency percentage
- Calculations glitch on the MDE computations fixed (thanks for the help, MDE!!!!)

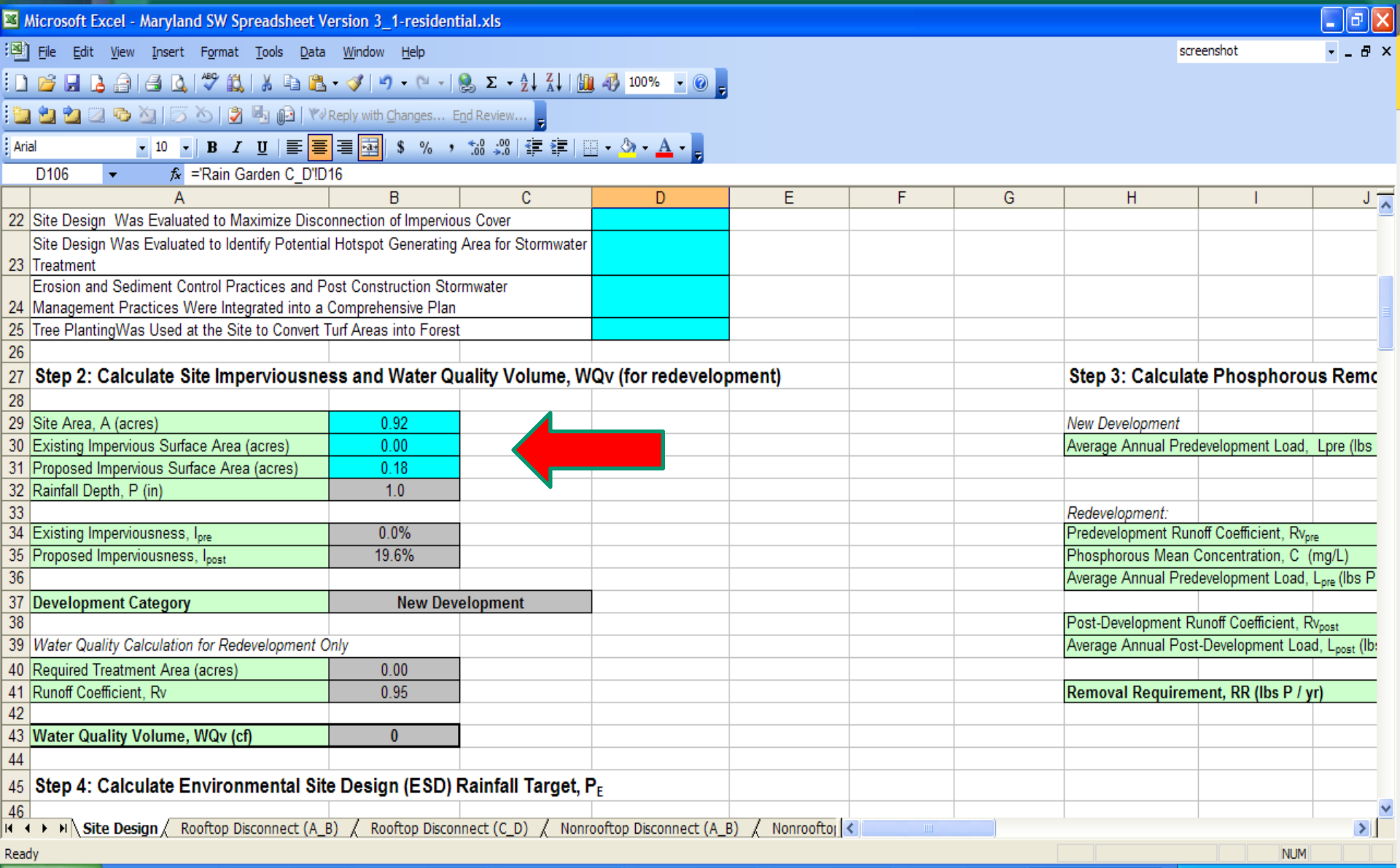
Let's Check Out the Spreadsheet!

Step 1 – ESD Checklist

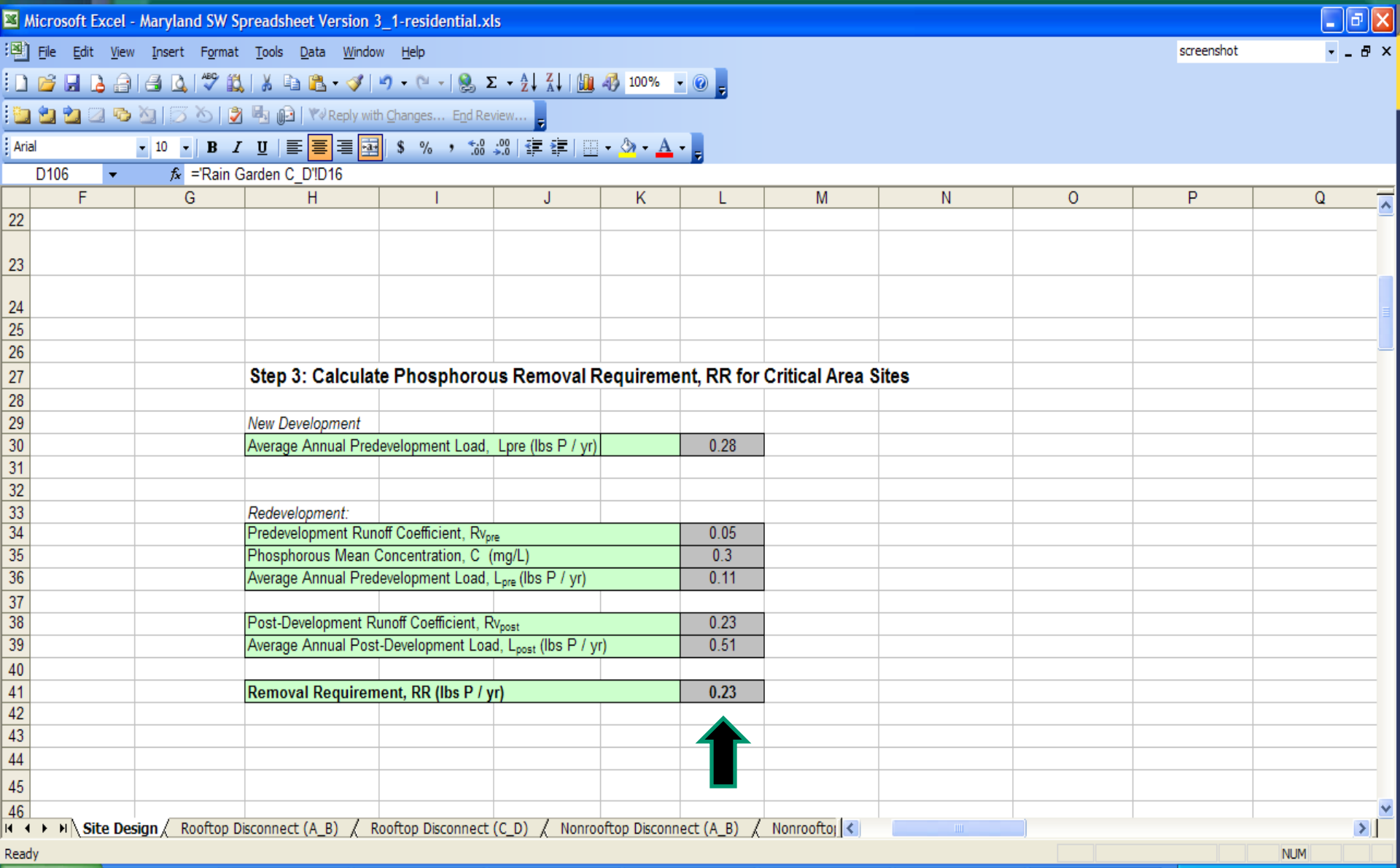


	A	B	C	D	E	F	G	H	I	J
3										
4	**Project Name:**	**McNulty's Residential Property**								
5	**Date:**	**4-Jan-13**								
6										
7		data input cells								
8		calculation cells								
9										
10										
11	**Step 1: Complete ESD Implementation Checklist**									
12										
13	*Check all of the Following ESD Practices That Were Implemented at Site*			*Yes - No - N/A*						
14	Environmental Mapping Was Conducted at Site Prior to Layout			*YES*						
15	Natural Areas Were Conserved (e.g., forests, wetlands, steep slopes, floodplains)			*YES*						
16	Stream, Wetland and Shoreline Buffers Were Reserved			*YES*						
17	Disturbance of Permeable Soils Was Minimized			*YES*						
18	Natural Flow Paths Were Maintained Across the Site			*YES*						
19	Building Layout Was Fingerprinted to Reduce Clearing and Grading at Site			*YES*						
20	Site Grading Promoted Sheetflow From Impervious Areas to Pervious Ones			*YES*						
21	Site Design Was Evaluated to Reduce Creation of Needless Impervious Cover			*YES*						
22	Site Design Was Evaluated to Maximize Disconnection of Impervious Cover			*YES*						
23	Site Design Was Evaluated to Identify Potential Hotspot Generating Area for Stormwater Treatment			*YES*						
24	Erosion and Sediment Control Practices and Post Construction Stormwater Management Practices Were Integrated into a Comprehensive Plan			*YES*						
25	Tree PlantingWas Used at the Site to Convert Turf Areas into Forest			*YES*						
26										
27	**Step 2: Calculate Site Imperviousness and Water Quality Volume, WQv (for redevelopment)**							**Step 3: Calculate Phosphorous Remo**		

Step 2 – Site Imperviousness



Step 3 – Critical Area Calculations



Step 3: Calculate Phosphorous Removal Requirement, RR for Critical Area Sites

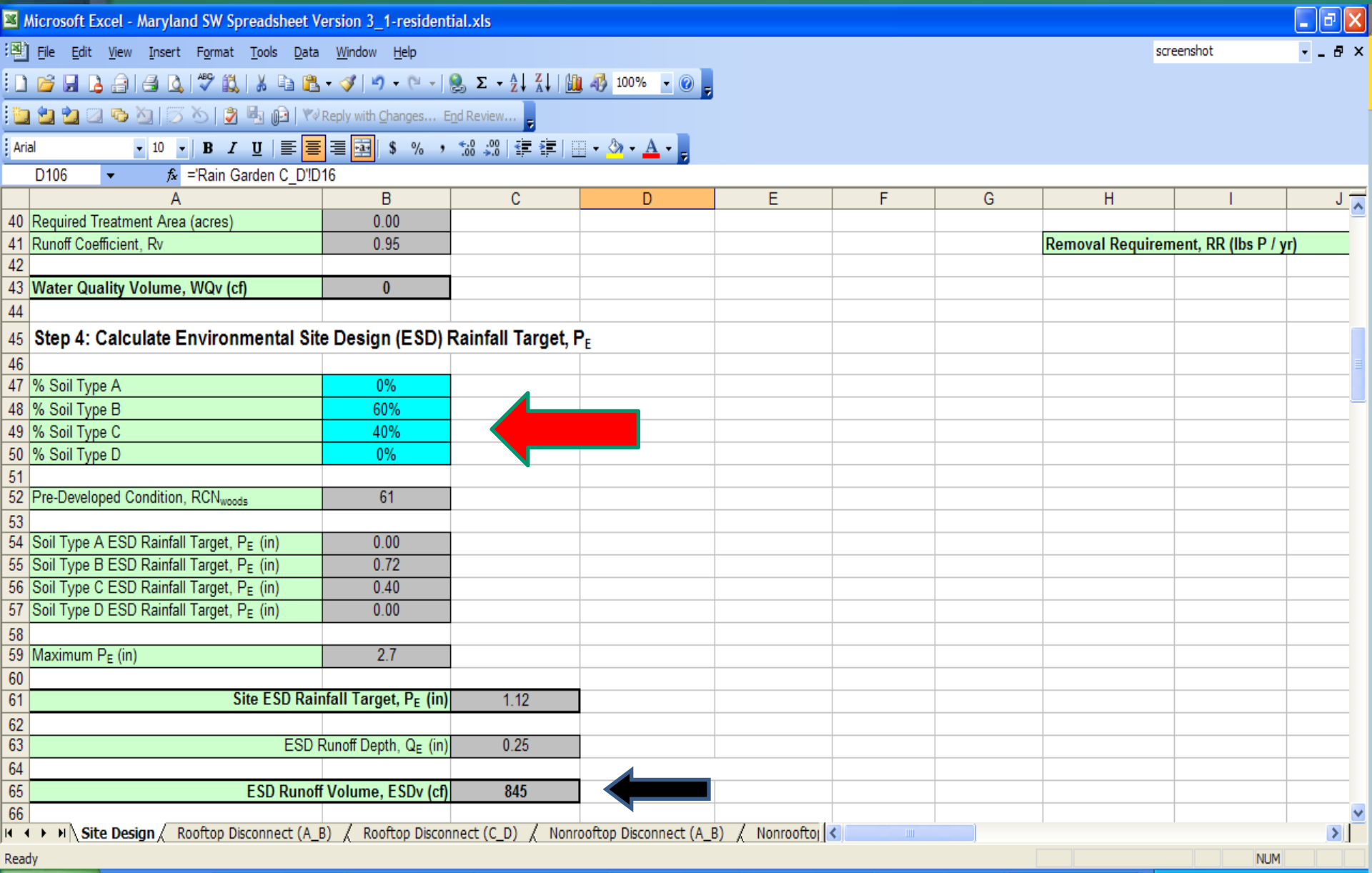
New Development

Average Annual Predevelopment Load, Lpre (lbs P / yr)	0.28

Redevelopment:

Predevelopment Runoff Coefficient, Rv_{pre}	0.05
Phosphorous Mean Concentration, C (mg/L)	0.3
Average Annual Predevelopment Load, L_{pre} (lbs P / yr)	0.11
Post-Development Runoff Coefficient, Rv_{post}	0.23
Average Annual Post-Development Load, L_{post} (lbs P / yr)	0.51
Removal Requirement, RR (lbs P / yr)	**0.23**

Step 4 – ESD Rainfall Target



Microsoft Excel - Maryland SW Spreadsheet Version 3_1-residential.xls

File Edit View Insert Format Tools Data Window Help

screenshot

Reply with Changes... End Review...

Arial 10

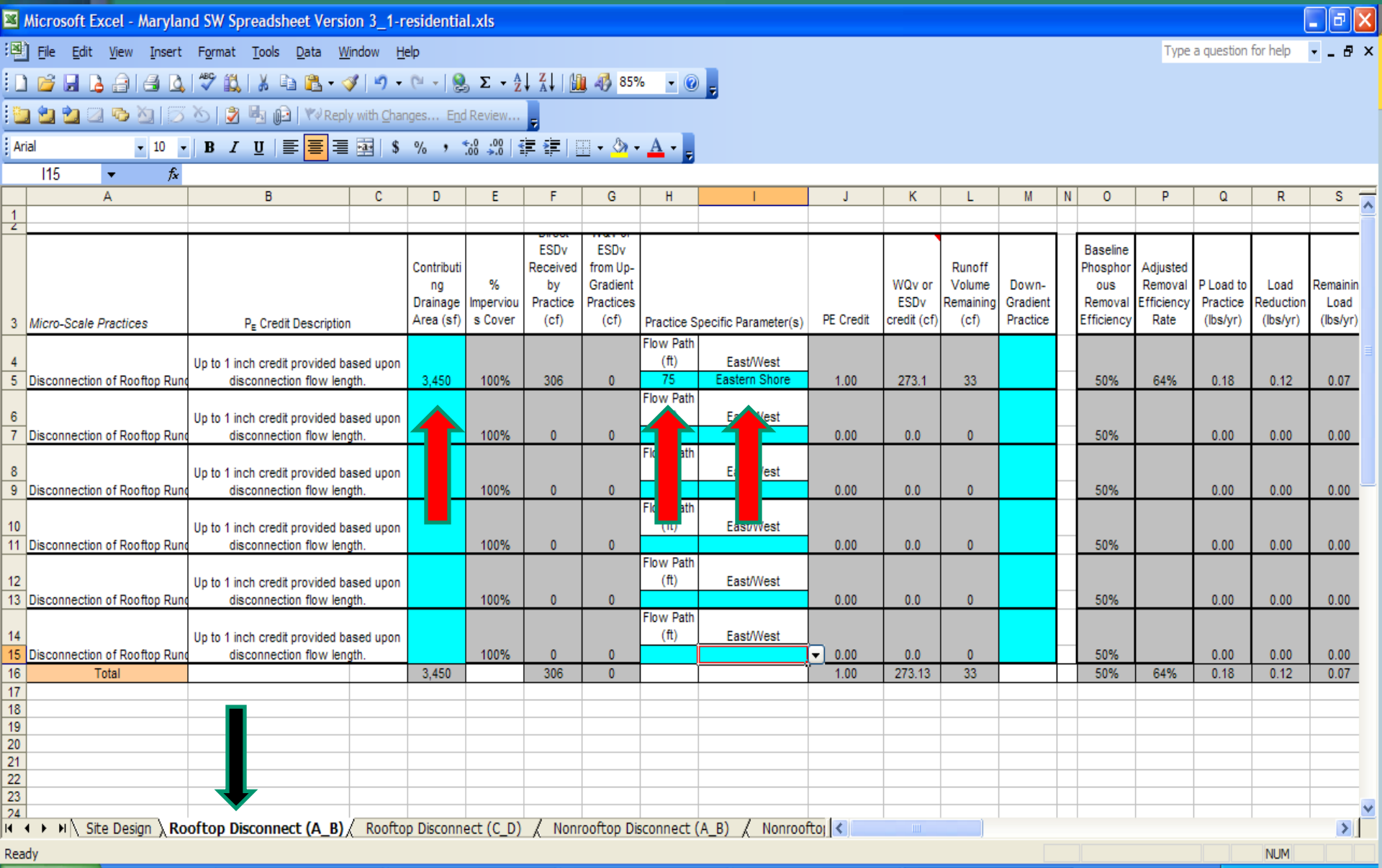
D106 ='Rain Garden C_D'!D16

	A	B	C	D	E	F	G	H	I	J
40	Required Treatment Area (acres)	0.00								
41	Runoff Coefficient, Rv	0.95						Removal Requirement, RR (lbs P / yr)		
42										
43	**Water Quality Volume, WQv (cf)**	**0**								
44										
45	**Step 4: Calculate Environmental Site Design (ESD) Rainfall Target, P_E**									
46										
47	% Soil Type A	0%								
48	% Soil Type B	60%								
49	% Soil Type C	40%								
50	% Soil Type D	0%								
51										
52	Pre-Developed Condition, RCN_{woods}	61								
53										
54	Soil Type A ESD Rainfall Target, P_E (in)	0.00								
55	Soil Type B ESD Rainfall Target, P_E (in)	0.72								
56	Soil Type C ESD Rainfall Target, P_E (in)	0.40								
57	Soil Type D ESD Rainfall Target, P_E (in)	0.00								
58										
59	Maximum P_E (in)	2.7								
60										
61	**Site ESD Rainfall Target, P_E (in)**		**1.12**							
62										
63	ESD Runoff Depth, Q_E (in)		0.25							
64										
65	**ESD Runoff Volume, ESDv (cf)**		**845**							
66										

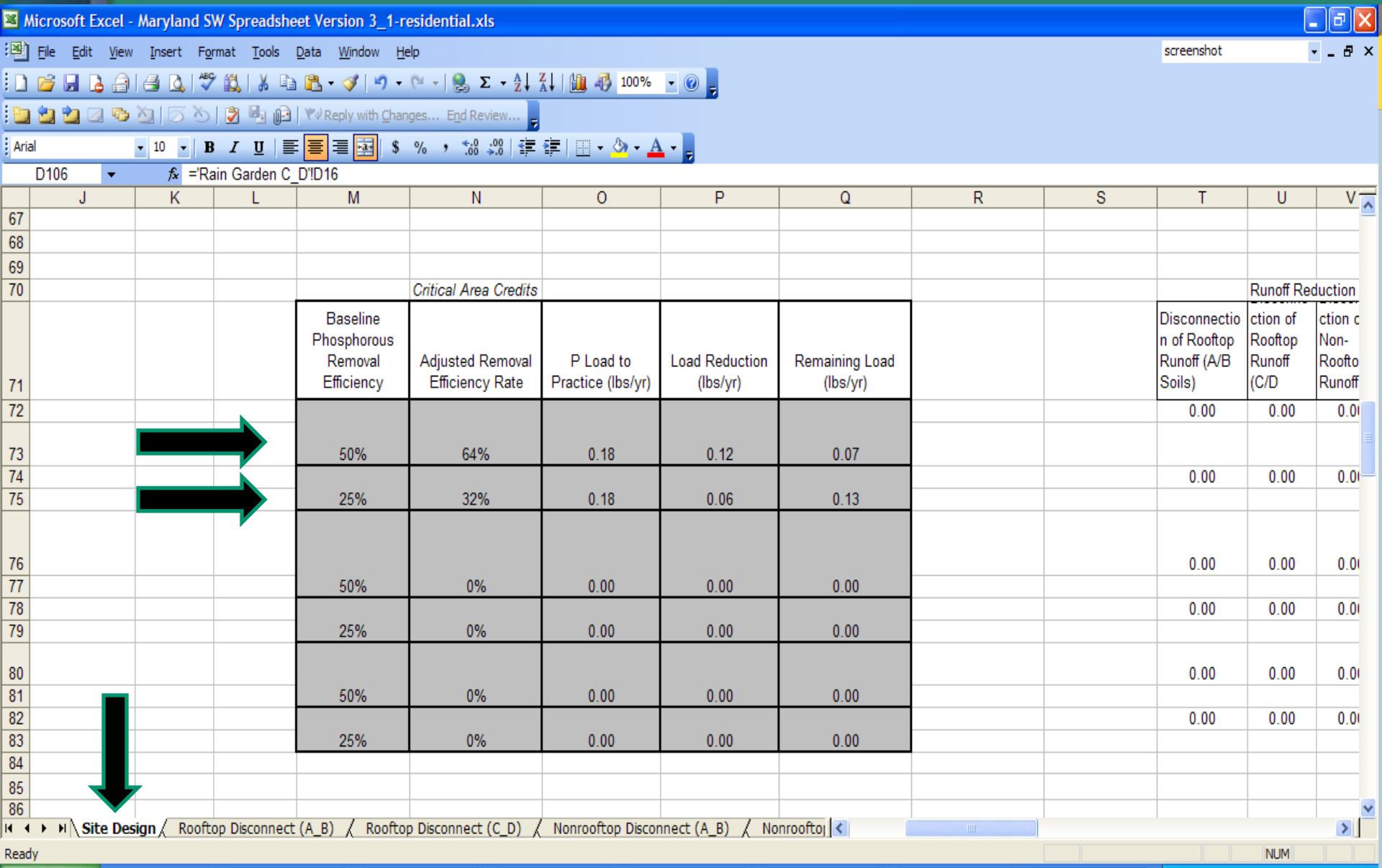
Site Design | Rooftop Disconnect (A_B) | Rooftop Disconnect (C_D) | Nonrooftop Disconnect (A_B) | Nonrooftop

Ready NUM

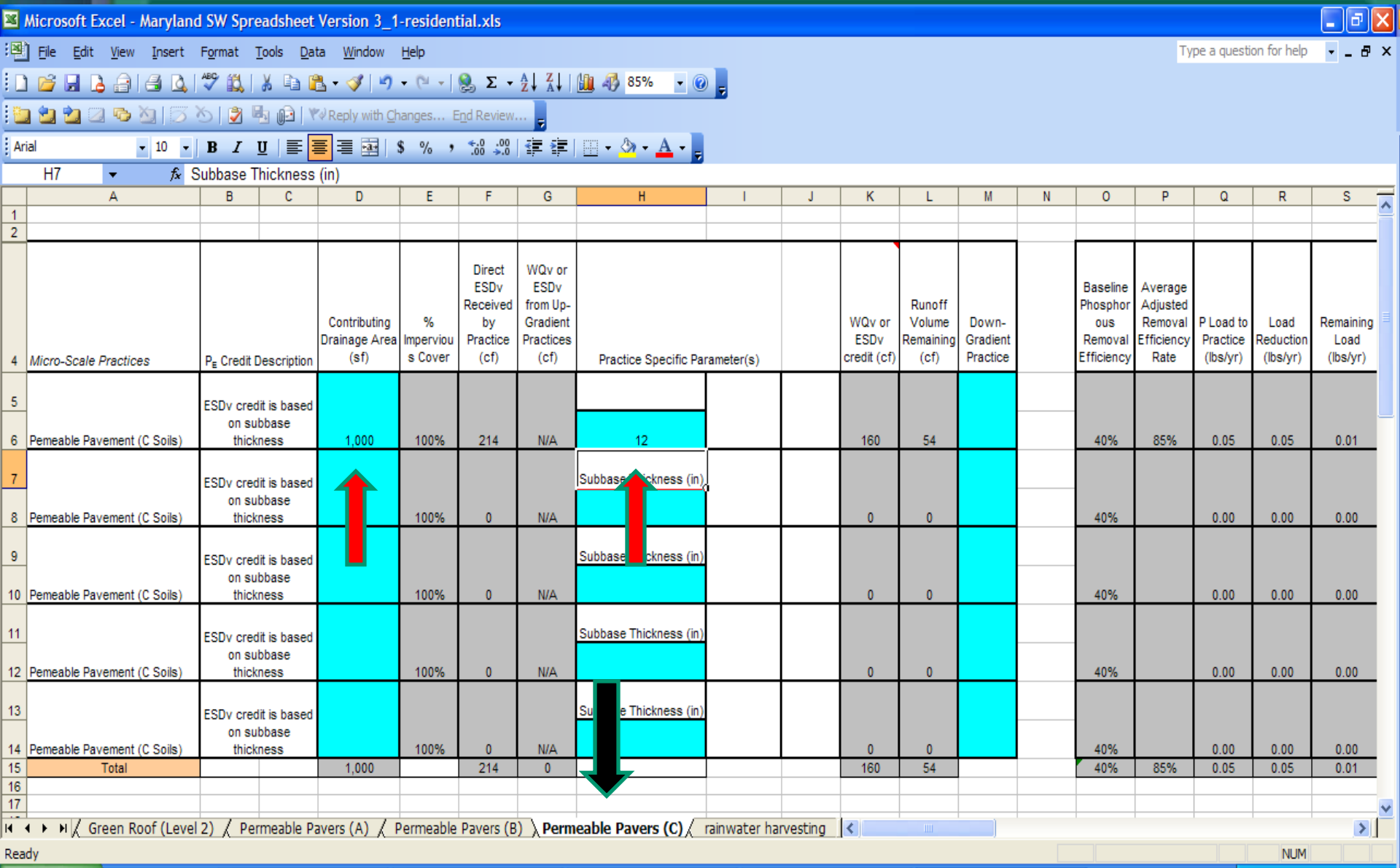
Step 5 - Rooftop Disconnect (A/B)



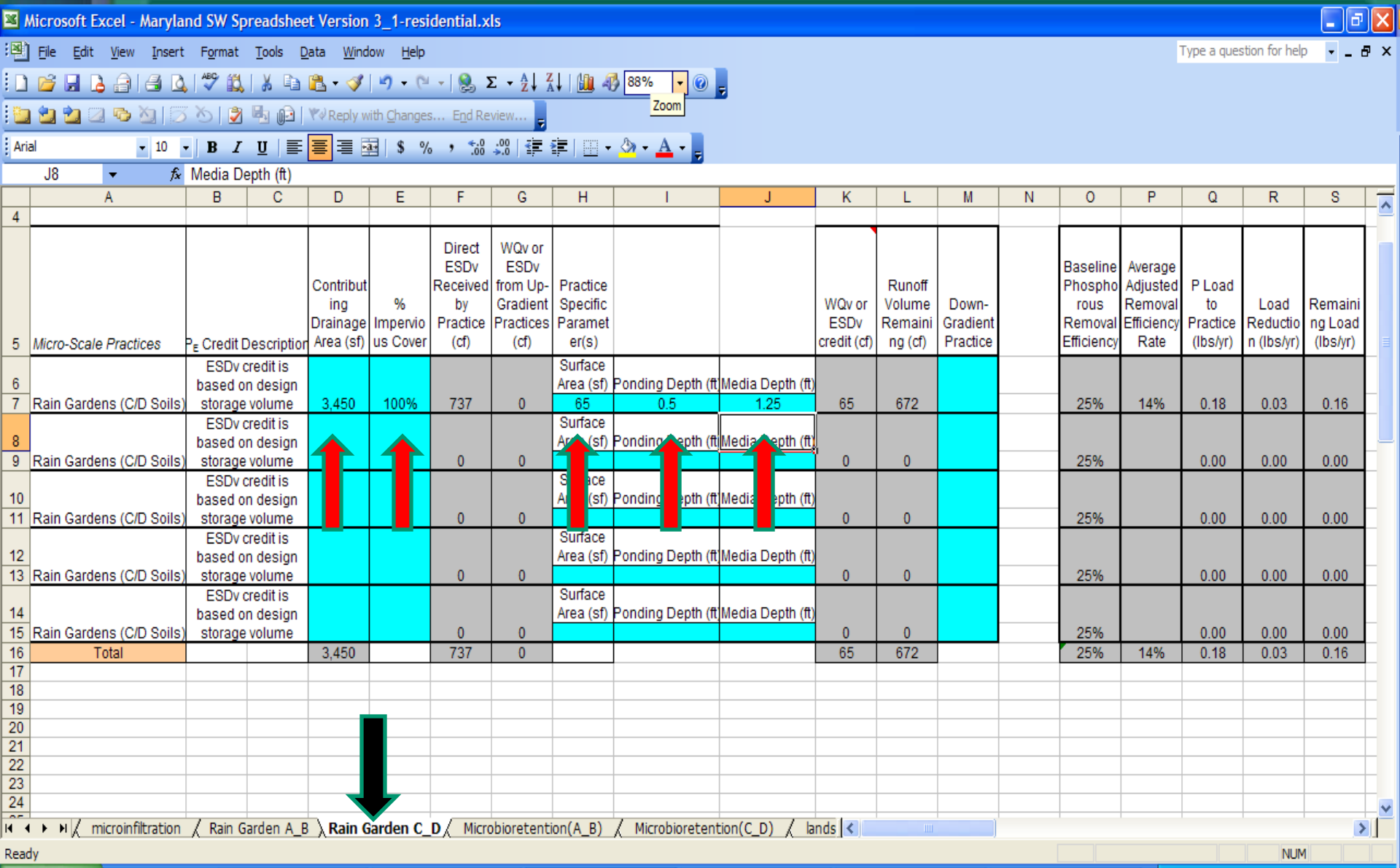
Step 5 – Non-Structural Practices



Step 6-Permeable Pavement (C)



Step 6- Rain Garden



Microsoft Excel - Maryland SW Spreadsheet Version 3_1-residential.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

88% Zoom

Reply with Changes... End Review...

Arial 10

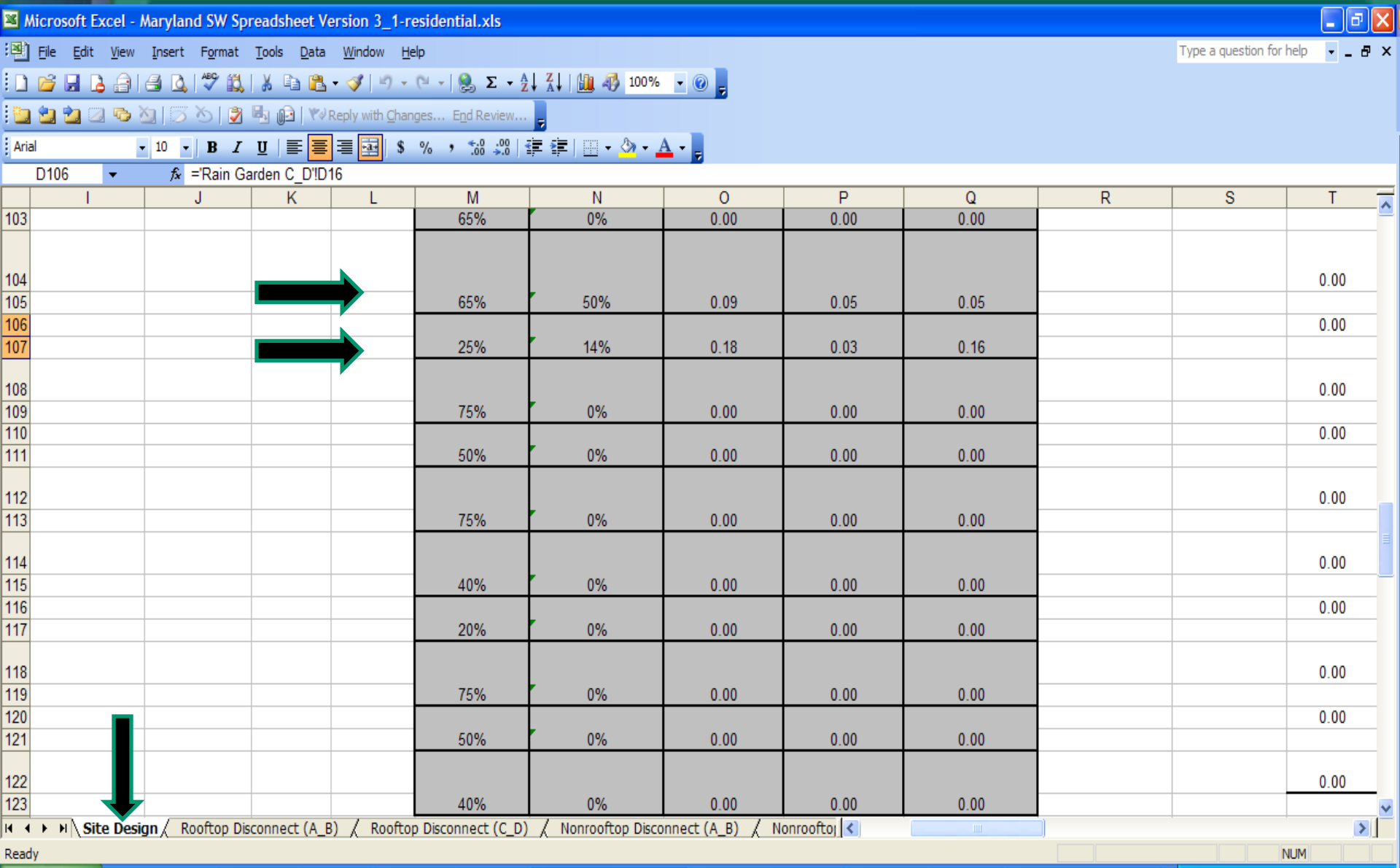
J8 Media Depth (ft)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
4																			
5	*Micro-Scale Practices*	P_E Credit Description		Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	Practice Specific Parameter(s)			WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)	Down-Gradient Practice		Baseline Phosphorous Removal Efficiency	Average Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
6		ESDv credit is based on design						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)									
7	Rain Gardens (C/D Soils)	storage volume		3,450	100%	737	0	65	0.5	1.25	65	672			25%	14%	0.18	0.03	0.16
8		ESDv credit is based on design						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)									
9	Rain Gardens (C/D Soils)	storage volume				0	0				0	0			25%		0.00	0.00	0.00
10		ESDv credit is based on design						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)									
11	Rain Gardens (C/D Soils)	storage volume				0	0				0	0			25%		0.00	0.00	0.00
12		ESDv credit is based on design						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)									
13	Rain Gardens (C/D Soils)	storage volume				0	0				0	0			25%		0.00	0.00	0.00
14		ESDv credit is based on design						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)									
15	Rain Gardens (C/D Soils)	storage volume				0	0				0	0			25%		0.00	0.00	0.00
16	Total			3,450		737	0				65	672			25%	14%	0.18	0.03	0.16
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			

microinfiltration | Rain Garden A_B | Rain Garden C_D | Microbioretention(A_B) | Microbioretention(C_D) | lands

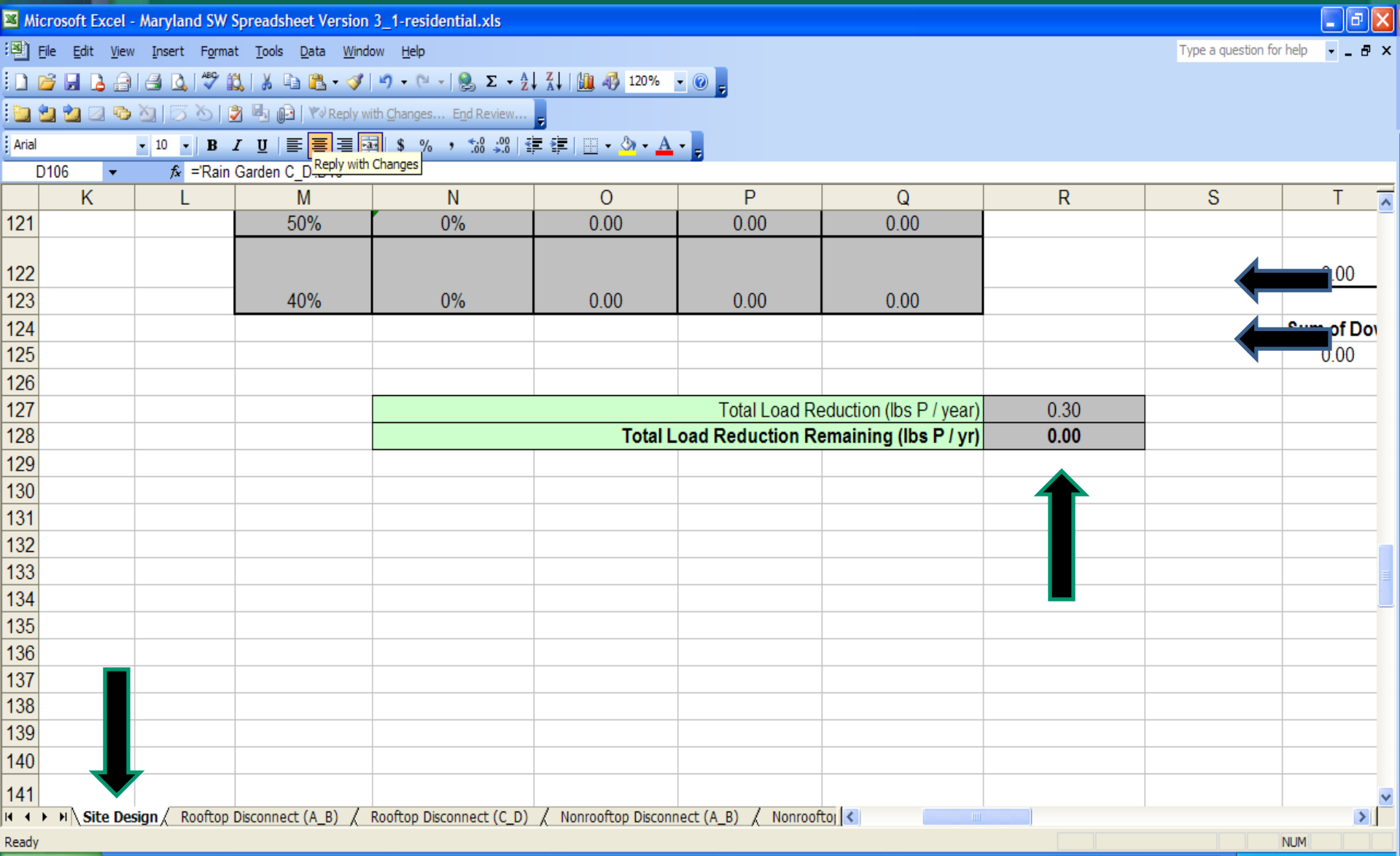
Ready NUM

Step 6-Micro-scale Practices

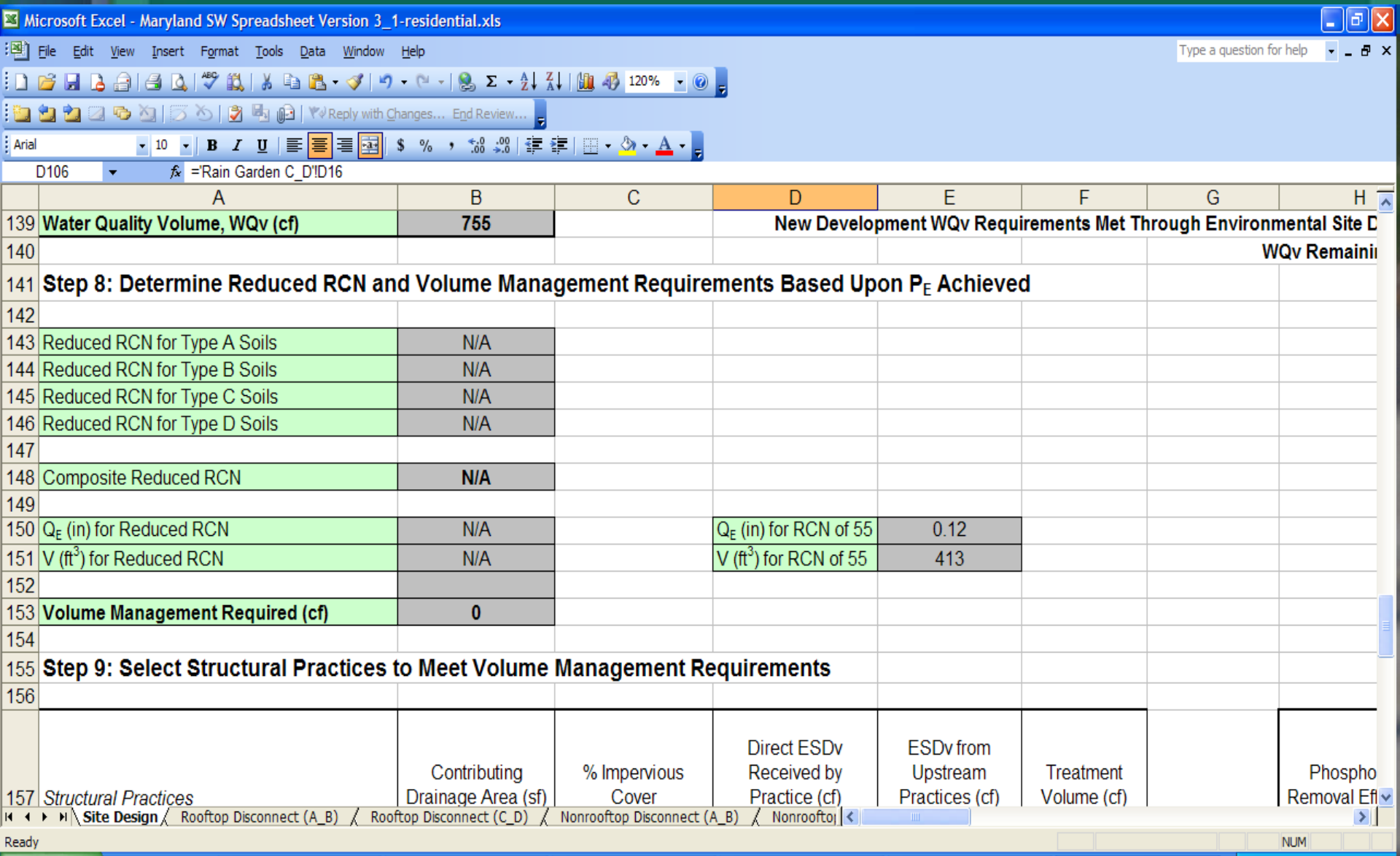


	I	J	K	L	M	N	O	P	Q	R	S	T
103					65%	0%	0.00	0.00	0.00			
104												0.00
105					65%	50%	0.09	0.05	0.05			
106												0.00
107					25%	14%	0.18	0.03	0.16			
108												0.00
109					75%	0%	0.00	0.00	0.00			
110												0.00
111					50%	0%	0.00	0.00	0.00			
112												0.00
113					75%	0%	0.00	0.00	0.00			
114												0.00
115					40%	0%	0.00	0.00	0.00			
116												0.00
117					20%	0%	0.00	0.00	0.00			
118												0.00
119					75%	0%	0.00	0.00	0.00			
120												0.00
121					50%	0%	0.00	0.00	0.00			
122												0.00
123					40%	0%	0.00	0.00	0.00			

Step 7 –Compliance Check

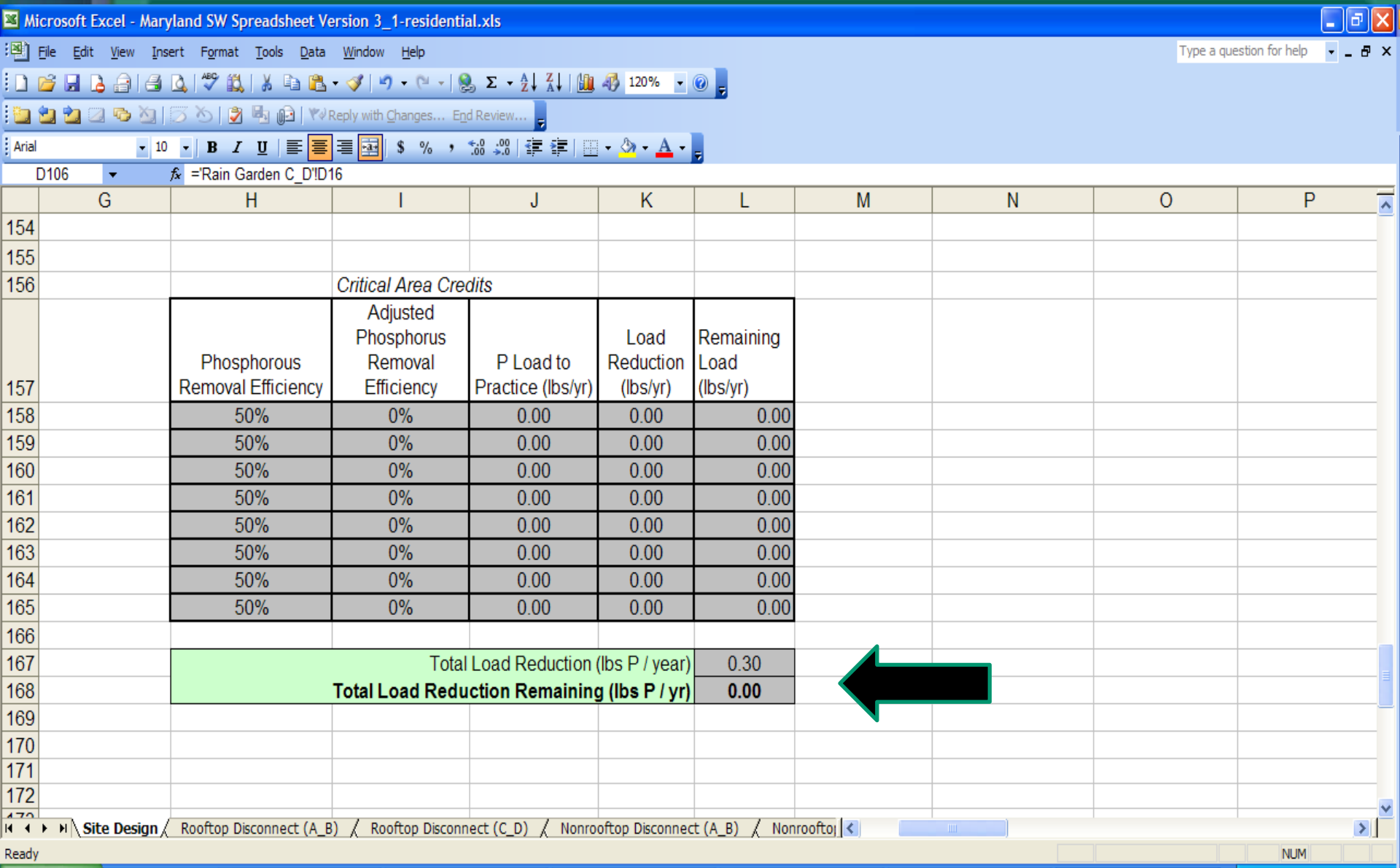


Step 8 – Volume Management



	A	B	C	D	E	F	G	H
139	**Water Quality Volume, WQv (cf)**	**755**				**New Development WQv Requirements Met Through Environmental Site D**		
140								**WQv Remaini**
141	**Step 8: Determine Reduced RCN and Volume Management Requirements Based Upon P_E Achieved**							
142								
143	Reduced RCN for Type A Soils	N/A						
144	Reduced RCN for Type B Soils	N/A						
145	Reduced RCN for Type C Soils	N/A						
146	Reduced RCN for Type D Soils	N/A						
147								
148	Composite Reduced RCN	**N/A**						
149								
150	Q_E (in) for Reduced RCN	N/A		Q_E (in) for RCN of 55	0.12			
151	V (ft^3) for Reduced RCN	N/A		V (ft^3) for RCN of 55	413			
152								
153	**Volume Management Required (cf)**	**0**						
154								
155	**Step 9: Select Structural Practices to Meet Volume Management Requirements**							
156								
157	*Structural Practices*	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	ESDv from Upstream Practices (cf)	Treatment Volume (cf)		Phospho Removal Ef

Step 9 –Structural Practices



Critical Area Credits

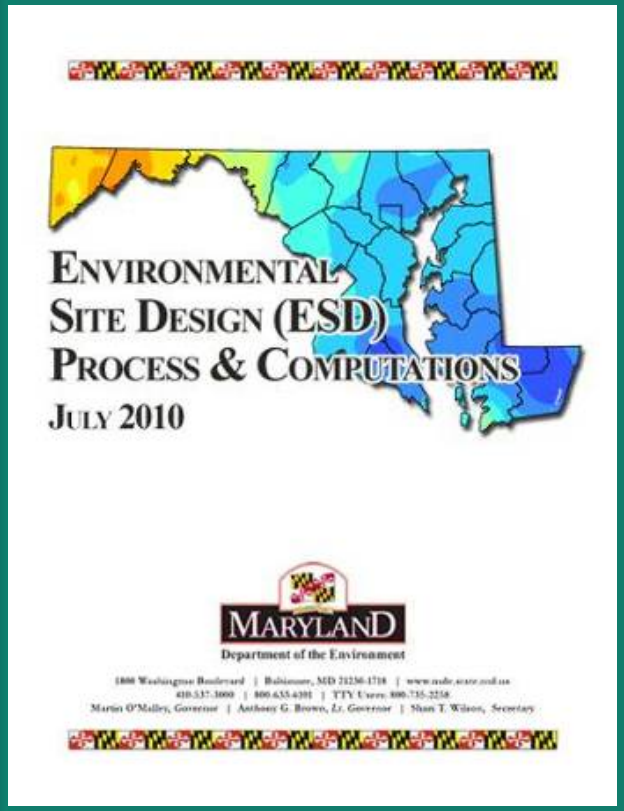
Phosphorous Removal Efficiency	Adjusted Phosphorus Removal Efficiency	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00

Total Load Reduction (lbs P / year)	0.30
Total Load Reduction Remaining (lbs P / yr)	**0.00**

We're Looking For Feedback!

- Critical Area staff met with a handful of local stormwater reviewers
  - Mostly positive feedback
  - Some minor tweaks to the spreadsheet considered
- Looking for more feedback from YOU!
- Email comments to nkelly@dnr.state.md.us

Spreadsheet Example

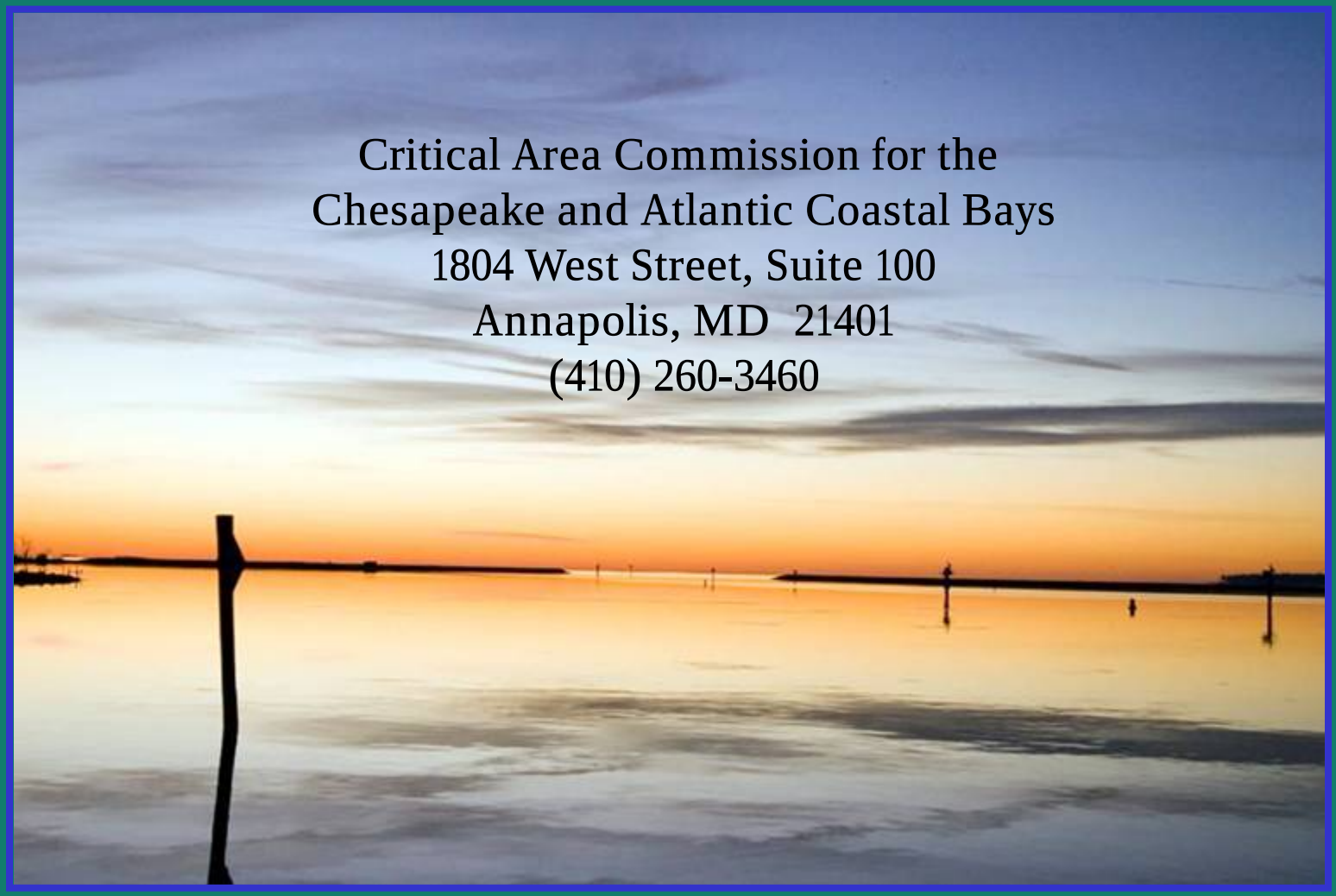


- Example: Residential Development
- Taken from MDE's ESD Process and Computations Publication (July 2010)

http://dnr.state.md.us/criticalarea/StormWaterMgt/index.asp

http://chesapeakestormwater.net/2012/12/environmental-site-design-criteria-for-the-maryland-critical-area-webcast/

Look for updates:
www.dnr.state.md.us/criticalarea/



Questions?

The 100-foot Buffer and Other Habitat Protection Areas

Maryland's Critical Area Program

State Highway Administration

July 23, 2013

Habitat Protection Areas require special protection measures

Habitat Protection Areas include:

- 100-foot Buffer
- Threatened and endangered species habitats
- Species in need of conservation
- Anadromous fish spawning waters
- Nontidal wetlands
- FIDS habitat
- Historic waterfowl staging and concentration areas
- Colonial Water Bird Nesting Areas
- Natural Heritage Areas

Habitat Protection Areas

- Specifically identified areas that can be found in all Critical Area designations
- Receive special protection in the Critical Area
- Can be adversely affected by clearing, grading, stormwater run-off, noise, and increased human activity

Critical Area Buffer

- The Buffer is at least the first 100 feet landward from tidal waters, tidal wetlands and tributary streams within the Critical Area
- No matter what its current condition – it is still the BUFFER and it requires special attention

Critical Area Buffer

Why is it so important?

- Water Quality
  - Filters runoff
  - Takes up nutrients
  - Promotes infiltration
  - Stabilizes soils and shoreline
- Riparian and Aquatic Habitat
  - Provides a wildlife corridor
  - Creates physical separation
  - Connects habitat

New Buffer Regulations
(March 8, 2010 & March 5, 2012)

- COMAR 27.01.09.01
- Existing regulations clearly not effective
- Created standards for:
  - Delineation
  - Expansion
  - Establishment
  - Mitigation
  - Buffer Management Plans

Buffer Delineation

- Delineated in the field at time of application
- Minimum width – 100 feet
  - From mean high water of tidal waters
  - From upland boundary of tidal wetlands
  - From edge of bank of tributary streams

Buffer Delineation Challenges

- All perennial and intermittent streams within the Critical Area are considered “tributary streams” and require a minimum Buffer from each bank.
- Field delineation vital to mapping all needed Buffers

Buffer Delineation Challenges

- The mysterious “tidally-influenced nontidal wetland”
  - Biologically, hydrologically a tidal wetland but one that was not included on the 1972 State wetland maps
  - Permits for disturbance required under nontidal regs instead of tidal
  - For Buffer purposes – it is a TIDAL wetland and it requires a minimum 100-foot Buffer

Buffer Delineation

Expansion for Contiguous Sensitive Areas

- Steep slopes (15% or greater) – 4 feet for every percent of slope or to top of slope whichever is greater

Buffer Delineation
Expansion for Nontidal Wetlands

- For nontidal Wetlands of Special State Concern (WSSC) – expand CA Buffer to include wetland and its 100-foot buffer
- For other nontidal wetlands – expand to include entire wetland

Buffer Delineation

Expansion for Hydric or Highly Erodible Soils

- Can use soil survey or soil borings
- Expand to landward extent of soil or to 300 feet, whichever is less

Critical Area Buffer Criteria

- Generally, new development activities not permitted within the Buffer (except water dependent facilities)
- Impacts must be avoided, minimized and mitigated
- Most* development activities require approval from the Critical Area Commission

*Some exceptions for roads, bridges or utilities with no feasible alternative

Avoidable Delays

- Be on the lookout for unmapped or incorrectly mapped streams
- Buffers required on intermittent and perennial streams (not ephemeral)
- Buffers must be mapped from Tidal wetlands as they exist in the field today – not according to 1972 Wetland Maps

Project Planning:
Critical Area Buffer Example

Plan ahead – avoid impacts

Buffer Mitigation

Depends on Activity and Tree Canopy Removed

- Area of Buffer disturbance multiplied by mitigation ratio for activity – plus
- Area of tree canopy removed

Activity	Mitigation Ratio
Shore erosion control	1:1
Riparian water access	2:1
Water-dependent facilities	2:1
Variance	3:1
Violation	4:1

Buffer Mitigation
Special Conditions

- For removal of dead trees – no mitigation required
- For diseased, dying or hazard tree – replant one tree for each one removed
- For removal of invasive species, restore based on area treated

Buffer Mitigation

- Location depends on site
- Prioritized locations
- Off-site acceptable if approved by Commission
- Mitigation banks and out-of-kind mitigation considered

Mitigation and Planting Standards

Planting Techniques

- Requirements vary according to purpose and amount of Buffer to be planted
- More flexibility provided for large areas, including allowance for natural regeneration

Mitigation and Planting Standards

New Specificity

- Some mix of stock size usually required
- Credits mandated in regulations
- Smaller stock requires longer monitoring period
- Some resemblance to FCA requirements

Buffer Management Plans

- Categorized according to activity and amount of planting required:
  - Simplified
  - Minor (< 5,000 square feet)
  - Major (> 5,000 square feet)

Other Habitat Protection Areas: Nontidal Wetlands

- If contiguous with the Buffer, expansion of the Buffer required
- If not contiguous, MDE is primary regulatory authority
- Provide copy of permit (if received) and mitigation information in project package
- Local government may require a variance for disturbance

Threatened and Endangered Species & Species in Need of Conservation

- Identify any habitats of threatened and endangered species, or species in need of conservation potentially affected by the project
- Develop a plan for protection of the species and habitat

Other Plant and Wildlife Habitat

- Identify plant and wildlife habitats including:
- Forest areas for FIDs and wildlife
- Colonial bird nesting sites
- Historical waterfowl staging and concentration areas
- Existing riparian forests
- Natural heritage areas

Protection Measures

- May include:
- Establishment of no-disturbance zones around nesting sites or colonies
- Time of year restriction on clearing or other development activities

Anadromous Fish Propagation Waters

- Determine if project will occur in watershed of streams where spawning occurs
- Avoid channelization and installation of any obstructions
- Crossings must be designed to minimize impacts
- No construction related to crossings between March 1st and May 15th

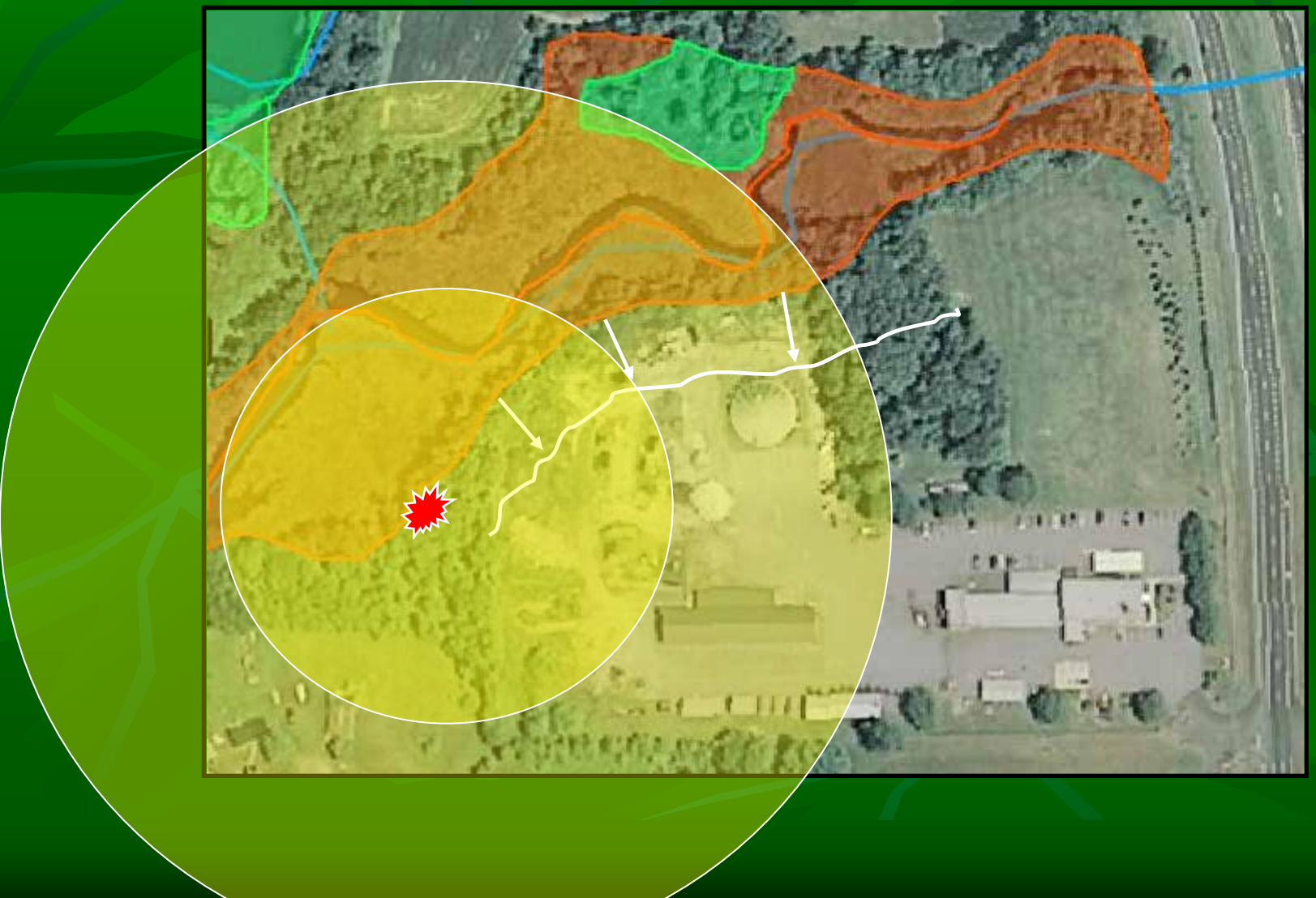
Site Specific Analysis

- Each site and project requires analysis
- DNR recommendations may vary
- Buffer regulations may offer necessary protection of habitats
- Coordinate with DNR, local staff and CAC staff

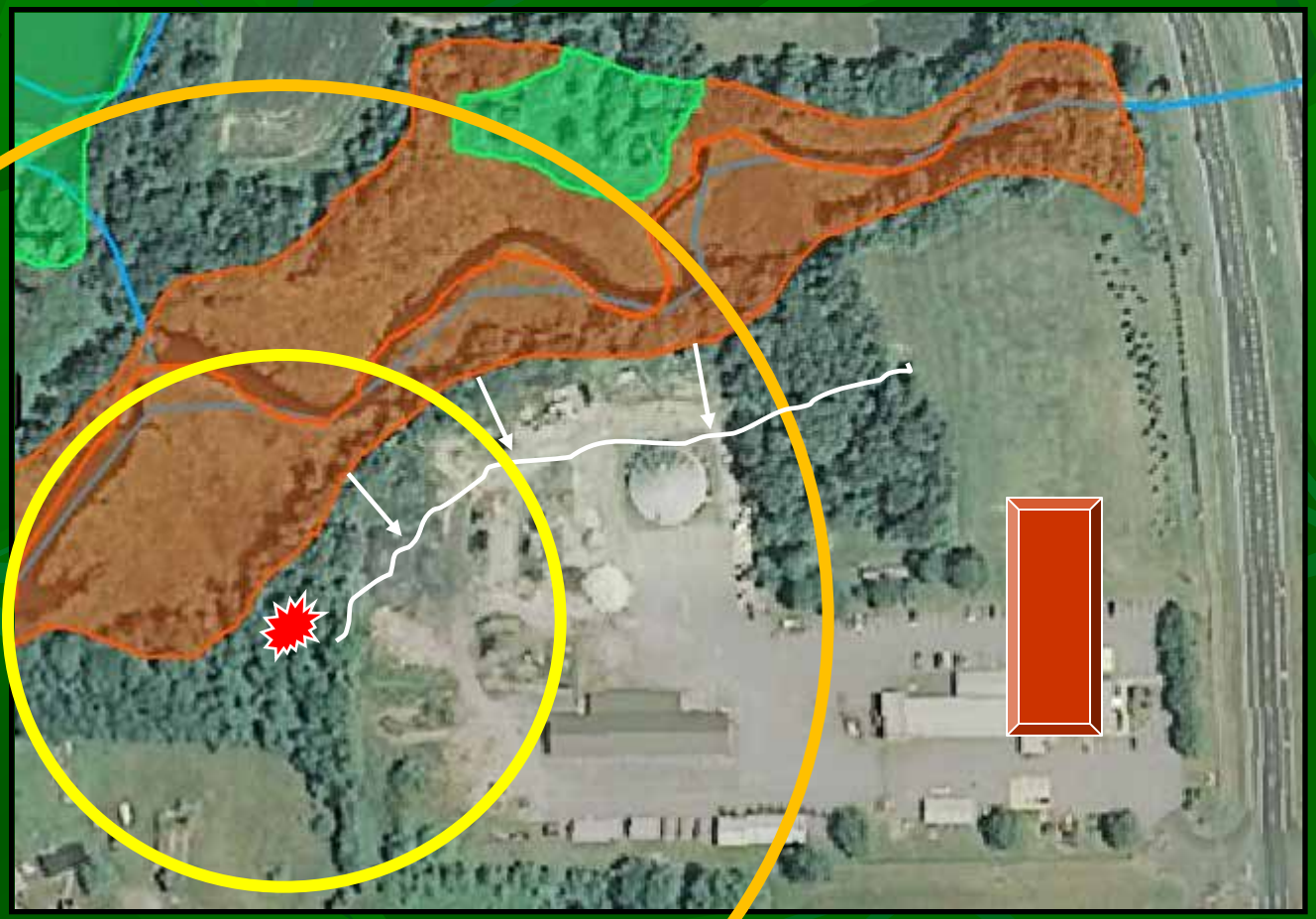
Plan Ahead – Avoid Impacts

1. Identify HPA

2. Apply DNR Recommendations



3. Modify Design



Everyone Is Happy!

Questions?

Plan Submission

Required Information, Buffer Mitigation and Buffer Management Plans

Required Information

- MOU Consistency Determination
  - Project Description
    - General Conditions
    - Project Category – Maintenance v Minor
  - Trinity Review
  - Buffer Disturbance and Mitigation
  - 10% Requirement
  - Additional Information as requested by CAC Staff

Required Information

- Commission Approval
  - State and Local Project Application Checklist
    - Public Notice
    - Agency Review – DNR, MHT
    - Final Plans – Buffer Mitigation, Forest Clearing Mitigation, 10% Rule Compliance
    - Final Authorizations – Stormwater, Sediment and Erosion Control, Wetland Impacts

Buffer Mitigation?

- It's more than just trees

- Redevelopment is complicated (and no, this isn't a confused relationship status on Facebook)

New Development

Activity	Permanent Disturbance Ratio	Temporary Disturbance Ratio
Riparian Water Access	2:1*	1:1
Water-dependent activity	2:1*	1:1
All other development	3:1*	1:1

***In addition 1:1 mitigation is required for the area of canopy cleared**

Permanent Disturbance

- "A material, enduring change in the topography, landscape or structures that occurs as part of a development or redevelopment activity"
- Includes:
  - Construction or installation of lot coverage
  - Grading: if not restored to prior vegetation
  - Clearing: if not for temporary access

Temporary Disturbance

- "Short-term change in the landscape that occurs as part of a development or redevelopment activity."
- Includes:
  - Material storage areas
  - Temporary access roads or pathways, if immediately restored to prior condition
  - Grading, if immediately restored to prior condition

SHA & Redevelopment

- Provide specific information regarding lot coverage
  - Repaving v Full depth reconstruction
  - Area of new structures
  - Net change in lot coverage
  - Area of canopy cleared
  - Other relevant information
- CAC Staff will work with you to identify mitigation ratio

Buffer Management Plans

- Proposed Impacts
  - Proposed areas of permanent and temporary disturbance*
  - Area of canopy cleared in the Buffer
  - Area of required Buffer mitigation

*For redevelopment projects identify how areas of existing lot coverage will be treated

Buffer Management Plans

- Proposed Planting Plan
  - Arrangement
  - Landscape Schedule: Species Type, Quantity, Size of Plants, Credits
  - Maintenance Plan: Invasive species and pest control practices, monitoring (2-5 years), reinforcement planting
  - Long-term protection Plan

Planting Agreement for State/Local Projects

State/Local Agency: MNCPPC

Project Number: 18-05

Agency Contact:

Phone Number:

Commision Approval Date: March 7, 2007

CAC Planner: Kate Schmidt

Project Name: Anacostia River Trail

Project Location: Historic Bladensburg Marina/Anacostia River Park

Square Feet Cleared Outside 100ft Buffer: 54,041

Mitigation Ratio for Clearing Outside Buffer: 1:1

Mitigation Calculation Outside Buffer: 54,041

Square Feet Disturbed/Cleared Within Buffer*: 13,068(BEA) & 21,780

Mitigation Ratio for Disturbance/Clearing Within Buffer*: 2:1 and 3:1

15% Afforestation Requirement Met?: N/A

Mitigation Calculation Within Buffer: 91,476

Total Mitigation Requirement: 145,517

Planting and Natural Regeneration Plan (attach additional sheets if necessary)

Mitigation Plan 1 (BEA): Mitigation Area located on site near Quincy Run. Includes 67 large trees, 68 small trees, and 99 shrubs for 27,200 square feet of mitigation.
Mitigation Plan 2 (non-BEA): Mitigation Area located at Colmar Manor. Planting Area 1 is 0.5 acres direct Buffer impact provided within 100-foot Buffer. Planting Area 2 is 2.24 acres within Critical Area boundary. Mix of large and small trees and shrubs.

Planting Date:

Year:

First Site Visit Date:

Completed by:

Second Site Visit Date:

Completed By:

Date Mitigation Complete:

Responsible Contact for Mitigation (Print)

Signature

Date

*See reverse for details

Revised 10/22/04

Planting Credits – Landscape Stock

Vegetation Type	Minimum Size	Maximum Credit (sf)	Maximum % of Credit
Canopy Tree	2” caliper	200	Not applicable
Canopy Tree	¾” caliper	100	N/A
Understory Tree	¾” caliper	75	N/A
Large Shrub	3 feet high	50	30%
Small Shrub	18 inches high	25	20%
Herbaceous perennial	1 qt or area planted	2	10%
Cluster 1	1 canopy tree; and 3 large shrubs or 6 small shrubs	300	N/A
Cluster 2	2 understory trees; and 3 large shrubs or 6 small shrubs	350	N/A

Planting Credits – Flexible Stock

Stock Size of Trees Only	Required Stems per acre	Survivability (%)	Maintenance Period
Bare root seedlings or whip	700	50%	5 years
½” to 1” container grown trees	450	75%	2 years
More than 1” container grown trees	350	90%	2 years

Maryland's Critical Area Program

Critical Area Review Process

State Highway Administration

July 23, 2013

Evaluating Projects for CAC Review

- Which review process is the right one? CAC review & approval or Commission staff review and concurrence?
- What is the difference between a typical Commission approval and a conditional approval?
- What should be submitted to the Commission?
- How long does the review process take?
- Who does what?

When Is CAC Review Needed?

- For all development activities not covered in the Memorandum of Understanding

Commission Review Process
What Types of Projects

- Projects that meet the CAC definition of “development” and are not included in the MOU
- Generally new construction or substantial alteration
- Projects that cannot fully comply with the Critical Area Program due to site constraints

Commission Review Process
Responsible Parties

- Correspondence to the Commission should come from the SHA
- Submittals to the CAC can be sent by the SHA or its consultants provided an SHA contact is included in the submittal
- SHA is responsible for compliance with all conditions and mitigation for the project

Commission Review

When Projects Should Be Submitted

- Prior to the first of the following occurring:
  - 30% design for a major transportation project,
  - RFP issued for site design, development, or engineering, or
  - Before initiation of any on-site disturbance or construction

Alternative Review Process
Consistency with MOU

- SHA and the CAC have a Memorandum Of Understanding (MOU)
- The goals of the MOU include:
  - streamline the review process
  - facilitate coordination
  - require full Commission review only when necessary

MOU **Process**

- SHA reviews MOU to determine whether a proposed activity is listed in the MOU
- If listed, SHA prepares a letter to CAC staff for concurrence
- CAC staff responds

Commission Review

Preparation and Scheduling

- Submit to CAC staff contact at least 6 weeks prior to CAC's monthly meeting
- CAC generally meets the first Wednesday of the month
- Application materials should be sent to the CAC office in Annapolis
- Complete submittals facilitate efficient review

Critical Area Meeting and Submission Schedule

NOTE: ALL MEETINGS ARE TENTATIVELY SCHEDULED FOR EACH MONTH, BUT MAY NOT OCCUR EACH MONTH

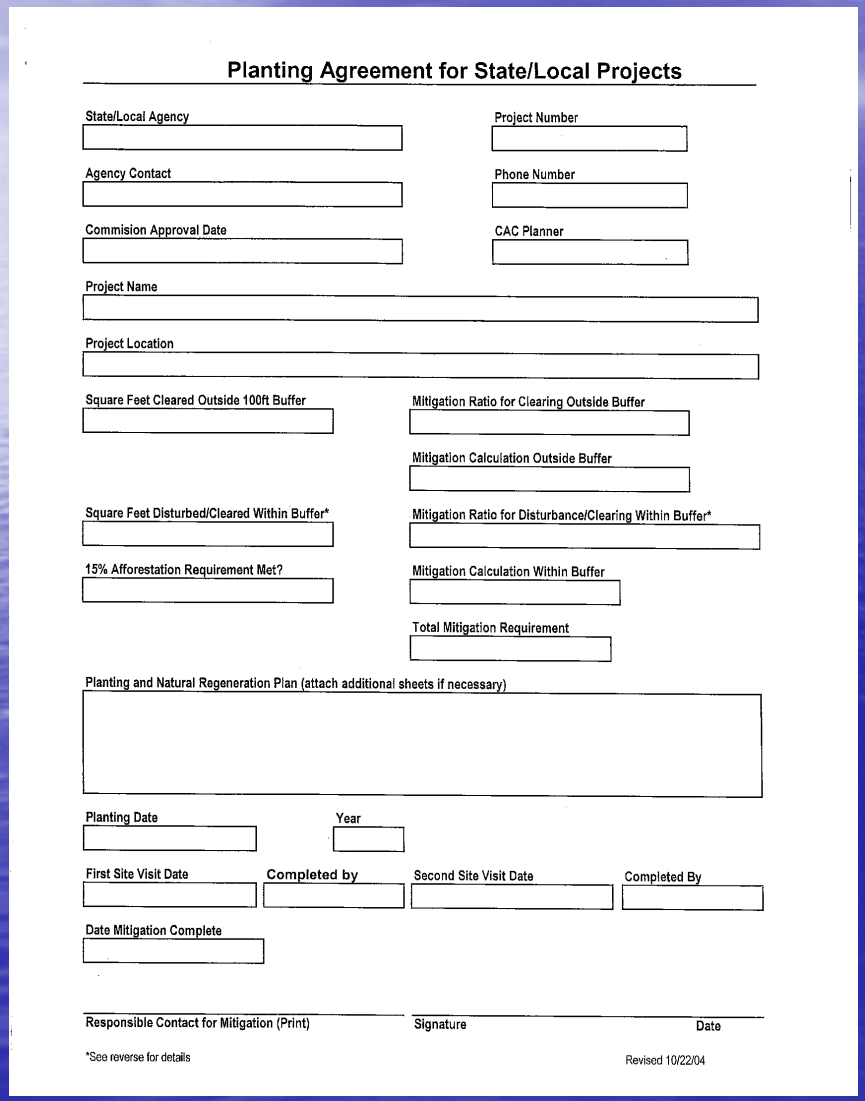
MEETING DATE	PROJECT SUBMITTAL DEADLINE
January 9, 2013 *	November 28, 2012
February 6, 2013	December 26, 2012
March 6, 2013	January 23, 2013
April 3, 2013	February 20, 2013
May 1, 2013	March 20, 2013
June 5, 2013	April 24, 2013
July 10, 2013 *	May 29, 2013
August 7, 2013	June 26, 2013
September 4, 2013	July 24, 2013
October 2, 2013	August 21, 2013
November 6, 2013	September 25, 2013
December 4, 2013	October 23, 2013

* Please note this date is adjusted and does not fall on the first Wednesday of the month.

Commission Review
Submittal Requirements

- State and Local Project Application Checklist outlines required project materials and information
- Checklist is divided into 5 major sections including:
  - General Mapping Features
  - Habitat Protection and other Sensitive Area Mapping Features
  - General Project Information
  - Minimum Documentation Requirements
  - State/Federal Agency Recommendations
- The information may be in the form of letters, reports, plans, and plan notes

State and Local Planting Agreement Form



Planting Agreement for State/Local Projects

State/Local Agency

Project Number

Agency Contact

Phone Number

Commision Approval Date

CAC Planner

Project Name

Project Location

Square Feet Cleared Outside 100ft Buffer

Mitigation Ratio for Clearing Outside Buffer

Mitigation Calculation Outside Buffer

Square Feet Disturbed/Cleared Within Buffer*

Mitigation Ratio for Disturbance/Clearing Within Buffer*

15% Afforestation Requirement Met?

Mitigation Calculation Within Buffer

Total Mitigation Requirement

Planting and Natural Regeneration Plan (attach additional sheets if necessary)

Planting Date

Year

First Site Visit Date

Completed by

Second Site Visit Date

Completed By

Date Mitigation Complete

Responsible Contact for Mitigation (Print)

Signature

Date

*See reverse for details

Revised 10/22/04

- If planting is required …
  - A Planting Agreement form must be completed and signed
  - A mitigation plan must be attached to the agreement form.

Commission Review

Public Notice Requirements

- Notice must be published for a minimum of one business day in a newspaper in the area of the proposed development
- Alternatively, if a project has other permits that require public notice, the agency may use that public notice to suffice for the Commission public notice requirements; however, a sign still needs to be posted
- Notice includes the sponsoring agency, contact information, description of the proposed development, address of the property, and statement that it is located in the Critical Area

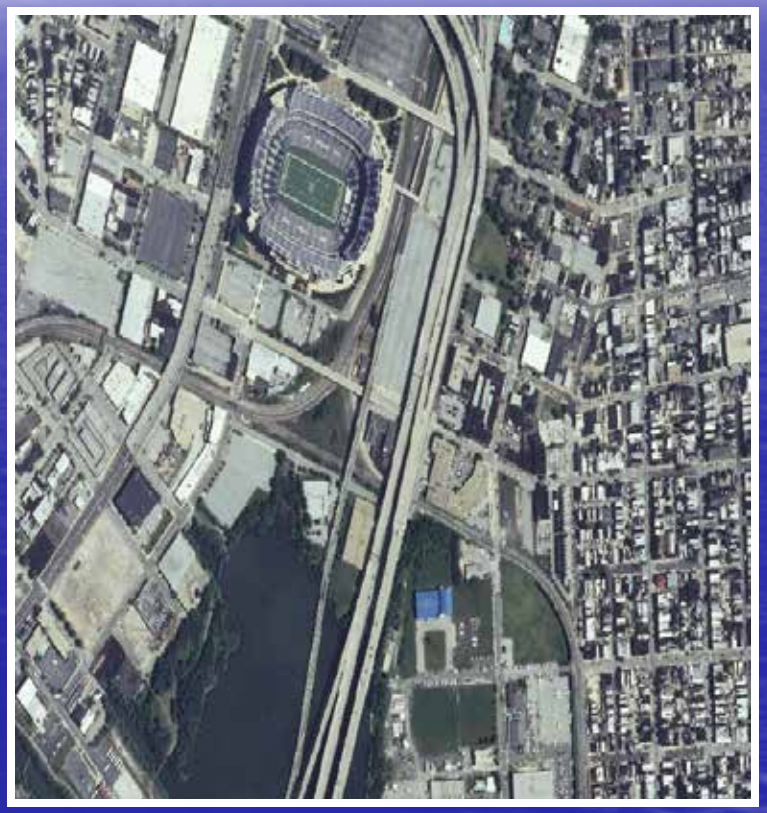
Commission Review

Public Notice Requirements

- Land must be posted no later than the date of the notice in the newspaper with a 30 inch x 40 inch sign with the same information as above including contact information
- At least 14 days must be provided for public comment
- Posting can also include information on the agency website or the website of the newspaper, and special mailings to neighborhood associations or residents of a particular geographic area.
- Evidence of notice must be provided to the Commission.

Conditional Approval Process

- Required when a development activity does not meet the development standards
- Required when a development activity will impact a Habitat Protection Area



Conditional Approval Process

- There exist special features or special circumstances that a literal enforcement of the Critical Area regulations would prevent a project or program from being implemented
- That the project provides substantial public benefits to the Chesapeake Bay Critical Area Program
- That the project or program is otherwise in conformance with this subtitle

Conditional Approval Process

- The literal enforcement of the regulations would prevent the conduct of an authorized State or local agency program or project
- A proposed process by which the program or project could be so conducted so to conform, insofar as possible, with the criteria set forth in COMAR 27.02.05
- Measures proposed to mitigate any adverse effects of the project or program

Project Approval
After Submittal

- If the submittal is complete, CAC staff will notify agency regarding process
- If the project requires full Commission review, the project will be scheduled for the next meeting
- The project manager should attend the CAC meeting
- Project consultants should attend if requested by the State or local staff

Project Approval
Commission Decision

- Project Subcommittee reviews project in detail in the morning
- Full Commission reviews project at formal meeting in the afternoon
- Commission votes to approve
- May add conditions of approval
- Notification letter sent to State or Local Agency within one week

Conclusion

Critical Area Compliance – State and Local Responsibility

- Projects on State, local and private land have to comply
- Consistency is important
- The Commission review process provides oversight, consistency, and flexibility