



Green Legislation Update:

Community Open Space
Forest Conservation
Stormwater / Drainage

March 2020



DEPARTMENT OF
LAND USE

Overview of Legislation Frameworks:

- Community open space
 - Key objectives:
 - Community open space design to be sustainable/economical for the public.
 - Timely completion of community open space.
 - Support open space that serves the range of needs for recreation, the environment, and other services.
 - Housekeeping of the existing code—ensuring consistency, clarity for the user.
- Forest conservation
 - Key objectives:
 - Increase forest protection and outcomes
 - Improve resource preservation and outcomes
 - Protect forests that contain the highest habitat value and conservation design
 - Modernize and achieve best science/practice
- Stormwater / drainage
 - Key objectives:
 - Achieve important water quality goals and requirements
 - Consumer protection—
 - Sustainability of infrastructure/development
 - Cost effectiveness of public investment
 - Ecological sustainability

Status:

- December 4, 2019:
 - Public workshop – presenting / discussing three draft legislation frameworks:
 - Community open space
 - Forest conservation
 - Stormwater / drainage
- December 4, 2019 through January 17, 2020:
 - Online survey / comment period
- February / March 2020:
 - Continuing to review feedback
 - Refining and drafting legislation
 - Public update (THIS SUMMARY DOCUMENT)

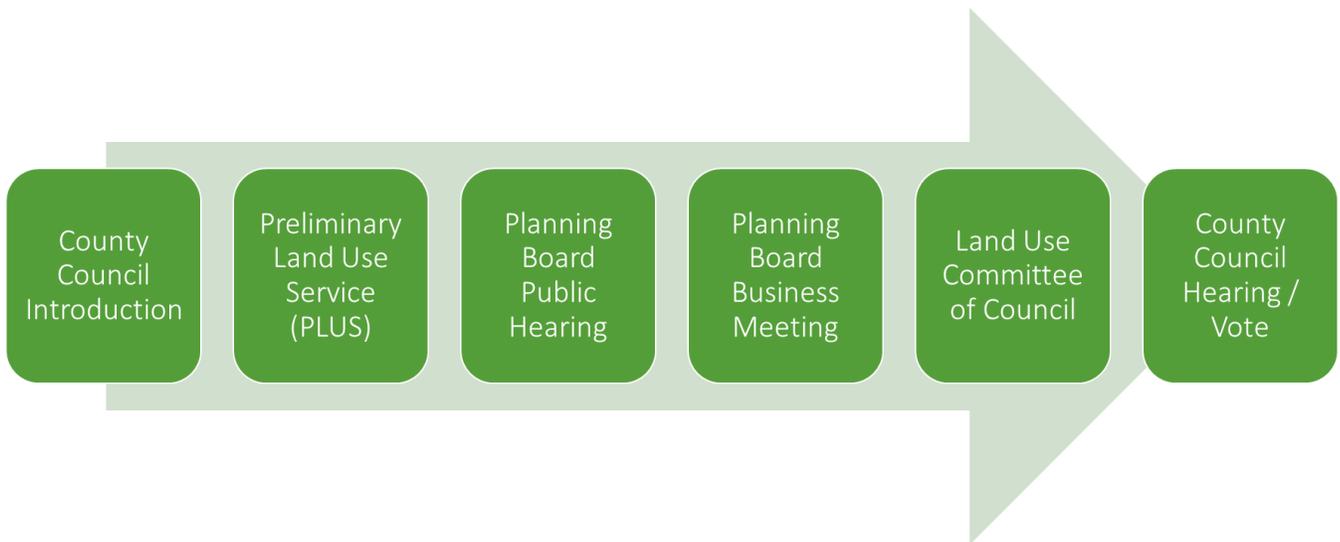
The Land Use Department has been working for many months on research and development of draft legislation for each of the three issues (community open space, forest conservation, and

stormwater/drainage). Feedback received is being used to further inform development of effective and balanced legislation toward protecting our community's precious environmental resources and promoting overall vitality of the county.

Next Step: Introduce legislation

- Community open space (Spring 2020)
 - Forest conservation (late Spring 2020)
 - Stormwater / drainage (Summer 2020)

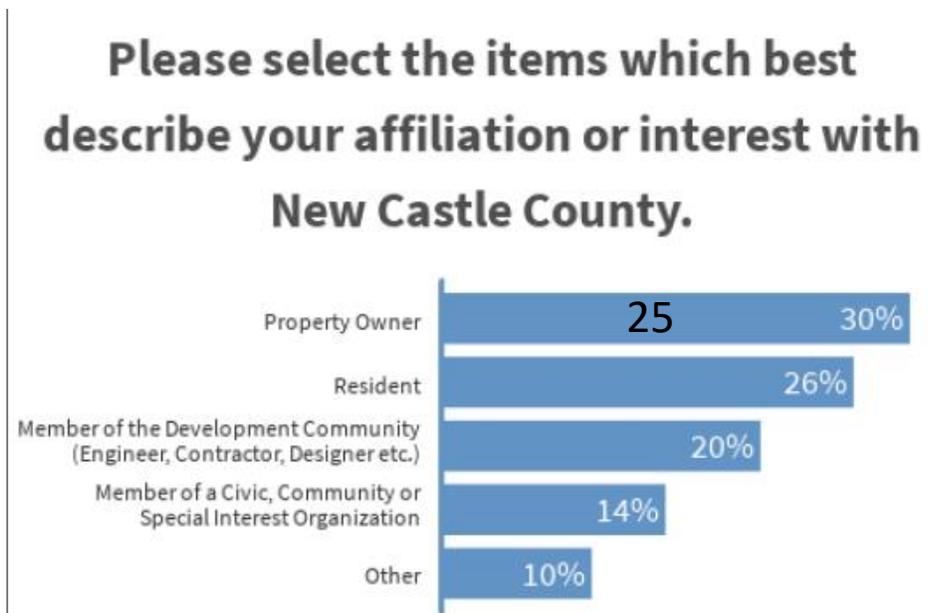
Standard Legislative Process for Text Amendment to County Code:



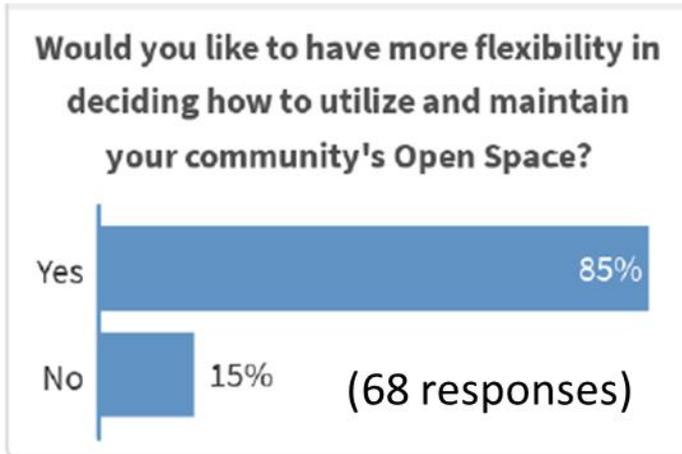
Summary of Feedback Received:

PUBLIC SURVEY RESULTS:

- Open December 4, 2019 - January 17, 2020
- General opinion type questions and open-ended option to submit more detailed comments
- 84 participants, as follows:

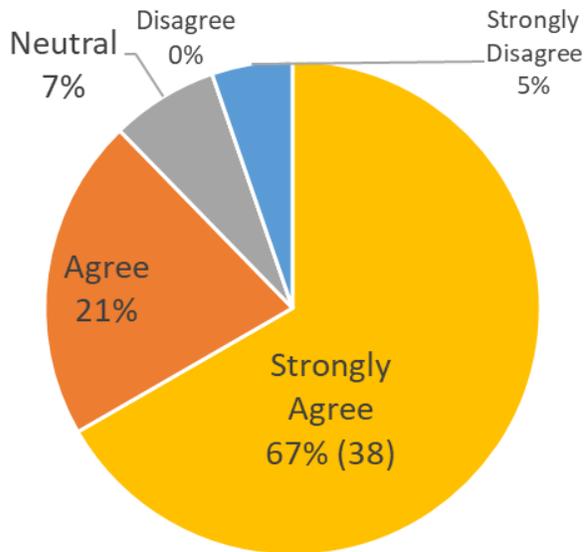


Survey Results – Community Open Space:

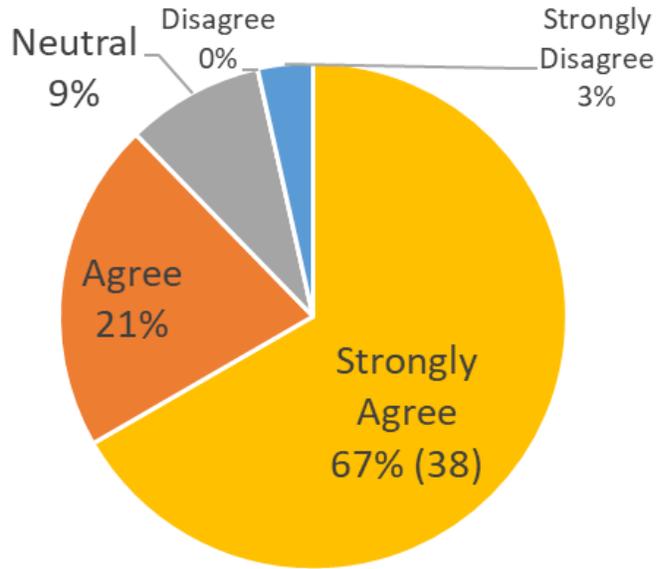


Survey Results – Forest Conservation:

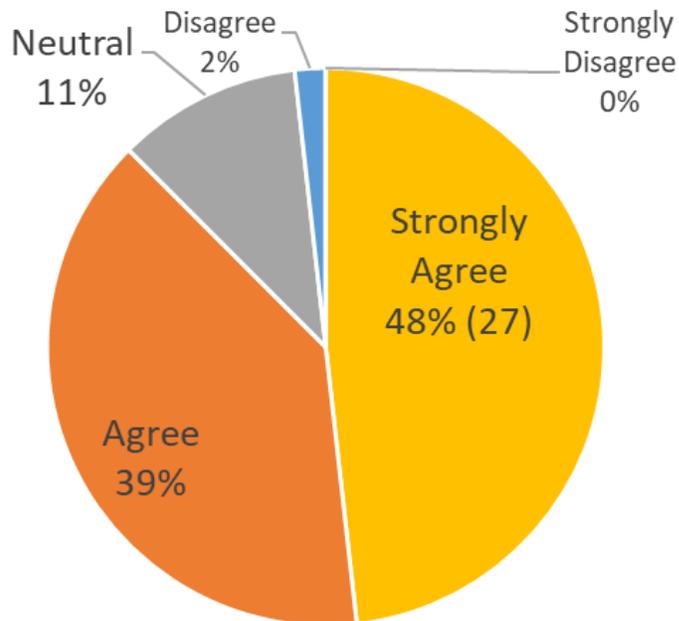
- Your opinion: “The introduction of afforestation standards will be beneficial to the environmental vitality of NCC.” (57 responses)



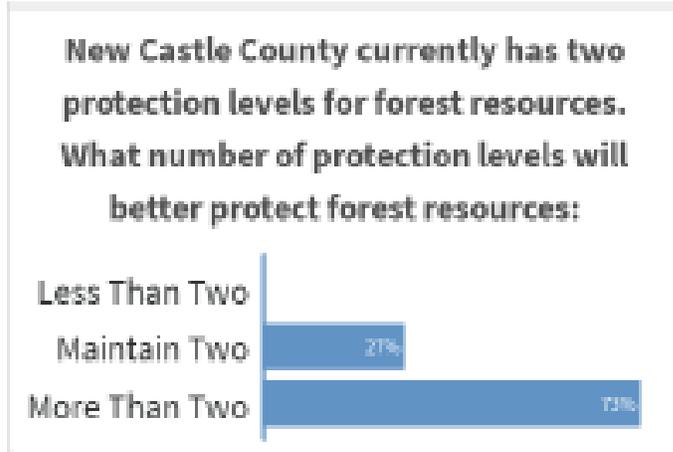
- Your opinion: "Resource protection standards should be increased for forests that contain high habitat value." (57 responses)



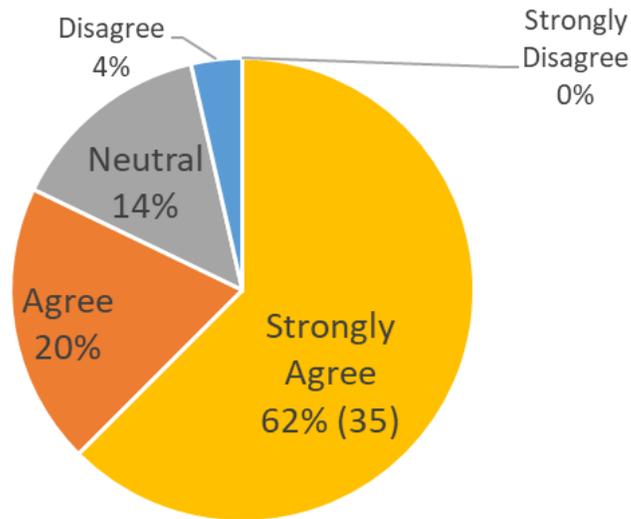
- Your opinion: "Establishing a formal method for delineating forest resources will have a positive impact on the land development review process." (56 responses)



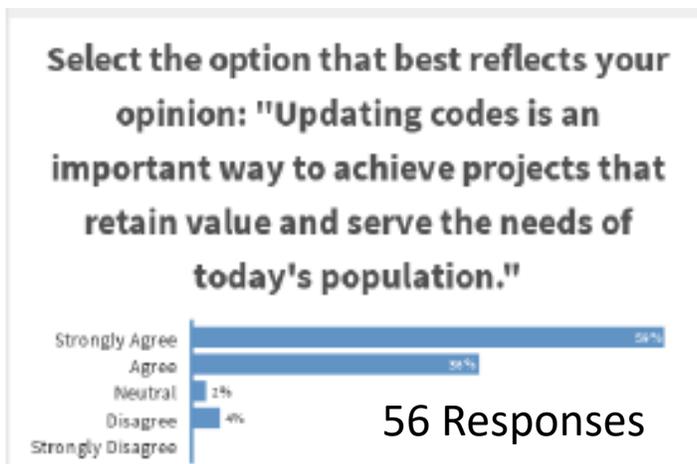
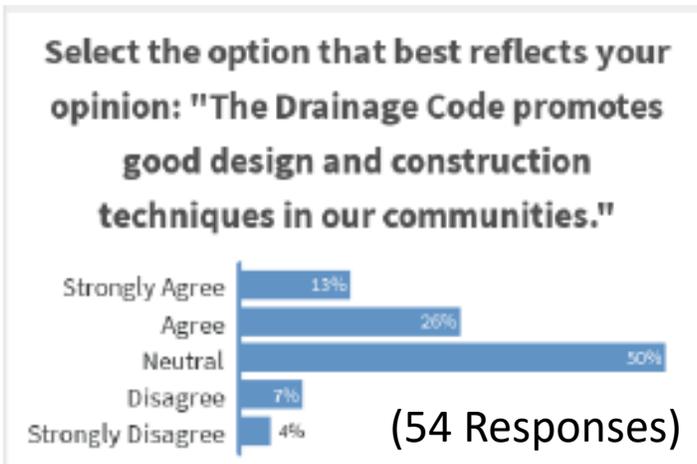
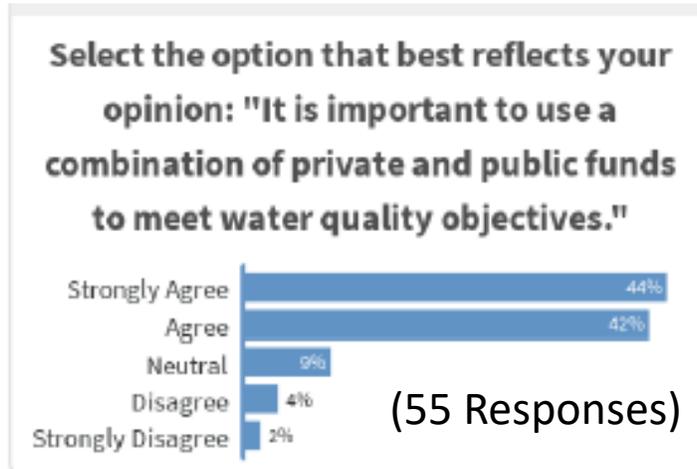
- NCC currently has two protection levels for forest resources. What number of protection levels will better protect forest resources? (55 responses)



- Your opinion: "Allowing professionals other than engineers and surveyors to submit select items for review will have a positive effect on the land development process." (56 responses)



Survey Results – Stormwater/Drainage:



SUBMITTED COMMENTS:

The following is a summary of comments from the public workshop (December 4, 2019), online survey, and other comment submittals through February 2020. The content has been organized/summarized around categories that emerged, where possible, for relative brevity and clarity. **This is not a full listing of all comments received.**

Full comments and responses are available by request. Please contact:

LandUse@newcastlede.gov

(302) 395-5400

Overarching

The following comments relate to all three draft legislative frameworks and/or have broader relevance to environmental issues:

- **Natural/environmental qualities are important for quality of life.**
 - Need to increase the current Resource Protection Standards in the UDC.
 - Focus on strategies that reduce turf grass, improve infiltration capacity, reduce need for herbicide.
 - Open space acquisition and maintenance/enhancement programs and funding are important part of achieving overarching objectives.
- **Add / allow / require other professionals with subject matter expertise to submit / certify / approve**
 - Landscape architects receive education in technical and scientific areas such as grading, drainage, horticulture, and environmental sciences as well as training in site design, planning, and historic preservation. The addition of landscape architects to the list of professionals allowed to submit land development plans to New Castle County follows current Delaware State Code, 24 Delaware Code § 200 and is in line with the Application and Plan Requirements noted in the United Development Code Appendix 1.
 - Arborists with a tree preservation emphasis and environmental land planners with LEED certified background are musts on a well-crafted, win-win, development for both the builder and the county.
 - I strongly disagree with the proposal "A new provision allows substitutions of plant material from the Landscape plan with Land Use Department approval if the plants conform to the plant list in this Chapter" Any substitutions should be per a design professional (not necessarily the one who certified the plan); I strongly believe only design professionals skilled in the ecosystem services, landscape applicability, and maintenance requirements of native vegetation should approve plant changes
 - Significant changes to landscape plans should require a qualified professional
- **Develop incentives to design above code minimums; include incentives, penalties, enforcement strategies to achieve better outcomes**
 - Use penalties and incentives for protecting forests and other untouched habitat, except to remove non-native invasives; this is a way to recover rainwater without basins that are costly to maintain and unsightly.
 - Better plans that are enforced by county law should have more teeth to them so that the builder has to think twice about whether he just wants to pay the penalties and do whatever

they want. Other states in the US say that they may remove trees for \$100 per diameter inch but aren't penalized for nonnative species and dead trees. historic trees are not allowed to be removed and have to have a tree preservation plan. This system requires environmental advocates surveying the species and analyzing the advantages of certain land use remaining untouched.

- Maybe an optional review stage can be added that allows for reduce fees to the developer if X% of design initiatives go above code minimum?
- **Flexibility in development options is important for creative/effective land planning and innovation.**
- **Educational/awareness components needed in addition to regs.**
- **Leverage public / private partnerships toward these public goals.**
- **Further develop restoration / mitigation strategies**

(Note: Many of the above comments are further articulated under the pertinent category/ordinance framework below.)

Community Open Space (Chapter 40, Article 27)

- **General**
 - Clarify definitions
 - “Natural”
 - Around management of attrition of vegetation and what scale of removals should require a design professional
 - Create an owners manual for management/maintenance
 - List of tasks, schedule of when they should take place, where to find additional information if repairs are needed, and reporting obligations with forms and points of contact (not to replace the technical plan)
 - Well-written, illustrated with clear diagrams
 - Require certified/licensed or other appropriate professional...
 - For site contractors verifying critical elevations
 - For modifications of a certain scale
 - Disagree with the proposal "A new provision allows substitutions of plant material from the Landscape plan with Land Use Department approval if the plants conform to the plant list in this Chapter" Any substitutions should be per a design professional (not necessarily the one who certified the plan)
- **Types of uses/vegetative cover for community open space**
 - Natural resource protection
 - Native plantings along streams
 - Green stormwater management
 - Allow native plants, natural ecosystems to populate; control invasives
 - Keep forests intact, don't remove and build unnecessary buildings, pools, etc; keep open, natural spaces and protect
 - Connectivity of open space/habitat
 - Recreation
 - Trails and pathways

- More than just standard playground or conventional landscaping in transportation corridors
 - Spaces for children to play near home
 - No net loss of passive recreation
 - Just passive open space (no paths)
 - Agriculture
 - Sustainable open space / maintenance factors
 - Structures
 - Community solar
 - Introducing structures that cover open areas to create utility infrastructure (e.g. solar fields) should have significant limitations. Open space should center around human recreation, viewsheds, and ecological benefits.
- **Process (methods/approach) for determining or changing uses/maintenance of community open space**
 - The ability of communities to modify their open space once responsible should have limitations. The documents of Record prepared and certified by design professionals should remain as the standards for future improvements. Future discussions, disputes, and pre-project research rely heavily on these documents as a record of what should have been or should be done regarding a particular issue.
 - Create an easier mechanism than recording a new landscape plan, to change the cover type within open space
 - Forum for discussion in advance of decisions
 - Advanced notice to public meetings where changes to current open space uses will be discussed
 - Residents should be able to rely upon their neighborhood representatives, working in conjunction with both elected officials and the County's professional staff, to arrive at any logical or necessary changes to private open space areas. 2/3rd's vote to make even minor changes is excessive.
 - Vote on a few concepts, opportunity to provide input before changes are made
 - Have a design team prepare a presentation to be voted on (should be available live and online for those who cannot make the meeting)
 - have organized meetings to discuss within the community what we need/want for our open spaces, have the county be supportive and have channels for easily transforming these needs/wants to plans and then to reality
 - Hold developers totally responsible for communication with residents about plans for existing and future open space. A legal notice and development signs are not enough. Most people won't take the time to go online to look over the plans. And most won't take the time to come to a meeting to comment. Landowners within a set distance should receive a notice in the mail, alerting them to proposed development and open space plans, with an easy feedback form to be sent in return mail. I know this is a big expense and that most people will toss the letter without reading it, but it is worth a try; it has the benefit of being able to tell those who complain at the 11th hour that "I didn't know this was planned" that they had been notified.
 - Landscape architects, engineers, residents and other stakeholders plan together and collaborate for best results

- I feel residents' voices for a green future are not listened to as strongly as developers' voices and more ways need to be implemented in order for us to be heard. Experts in landscape design and the environment need to have at least as much say as those who are backed by business interests.
 - Open space turnover process should have transition period where the board members are identified and made aware of their roles as well as the maintenance regimes currently managed and funded by the developer prior to the actual turn over.
 - Factors to consider
 - Include environmental considerations for native plants/animals, control of invasive , storm water management as well as public recreation use
 - Open space should be evaluated in context of demographic/community change and the surrounding open space, parks, environmental benefits, passive and active recreation
 - Factor in the abundance of public open space that already exists (e.g. federal, state, local protected land) into achieving a balance of uses that serve range of needs, including farming
 - Define nature of what activities can occur within conservation easements
 - Consider setting a required percentage of passive vs. active open space
 - Ability to use cutting edge innovations to improve aesthetics, maintenance, and function of open spaces and stormwater features. Encourage HOA's and others to use conservation practices in managing open space (e.g. native trees, shrubs, grasses and wildflowers, detention basins where appropriate)
 - Grants for installation and perhaps a small annual maintenance grant to "go native" supporting HOA's to use native plants.
- **Technical Requirements, Construction Completion and Inspection**
 - The provision requiring the completion of open space fine grading prior to the release of building permits may not be appropriate for areas where open space is utilized as part of the perimeter controls within the E&S design. Appropriate exceptions to this requirement should be listed. An extension for planting installations should include a required completion date.
 - Consider increasing the developer's letter of credit from 100% to 125% to account for cost escalations during the construction period and as additional incentive to complete the work.
 - 'Good condition' should have a specific definition within the UDC and state the mechanism(s) and party/professional responsible for certifying that the condition has been achieved.
 - For turf areas, include a minimum percent cover.
 - Where owner planted plantings are permitted, clarify that they are to be non-invasive.
 - Certification by professional / landscape architect that elements are "alive and in good condition"
 - Create a checklist for the minimum content of the report required for private street construction/inspection and determine at which time it should be submitted and accepted.
 - Consider making all or a portion of these standards retroactive to all open space not yet approved/accepted where fewer than a certain percentage of building permits have been issued or for phases (or subphases) for which no building permits have been issued.
 - For the bullet beginning with 'Permission to tie into a pipe system....', consider clarifying this restriction as pertaining to new connections to a downstream pipe system.

- The restriction of emergency spillways discharging to a residential property may be overly restrictive even if an easement does not exist.
- Consider clarifying the Developer's responsibility to clear snow.
- "All open space shall be final graded prior to the release of building permits within each phase". Depending on the existing and proposed conditions for the community, completing the open space to final grade prior to allowing home construction may not be feasible and will put a further cost burden on the developer.
- For the fourth bullet, consider revising 'The community may....' To 'A maintenance organization board member must....' This provision would permit at least one representative from the organization to ask questions during the inspection while at the open space inspection
- Condominiums: Notations on the required completion items should be noted on the Sediment and Stormwater Management Plan, Grading Plan (for multi-family), Lines and Grades Plan (for detached and semi-detached), and/or the Record Landscape Plan as appropriate for the item(s) needing to be addressed.
- Changes to open space or common facilities: The provision for the Land Use Department to permit plant material substitutions from the Record Landscape Plan should not extend to restoration or restored areas. The Department should also be aware that the substitution of one plant with any one from a list may not be appropriate for the location, growing condition, or adjacencies.
 - Modification of opens space by a maintenance corporation or condominium organization should be restricted to areas that do not include restoration unless the request is accompanied by documentation from a professional with expertise in the specific restoration area/activity.
- Prohibiting the burial of contaminated soils should be eliminated; brownfields are under DNREC; this would limit redevelopment of brownfields.
- Once the open space has been completed, accepted and turned over to the community/HOA, the developer should only be responsible for debris removal/remediation if it is necessary due to the actions of the developer or their contractor.
- "The Developer is responsible for rectifying any discrepancies between the documents for the life of the community at no cost to the community." Developer responsibility for discrepancies between documents for life of the community is excessive, difficult to enforce.
- Long term replacement of alleys, streets and storm sewer will be a significant burden and money the HOA may never require. Recommend that it be a percentage (10% seems reasonable), to be placed in a Capital Reserve Account, specifically designated for such purpose and not in the general fund. HOA documents should also require that the HOA fund the Capital Reserve account at 2.5% every year to build it up.
- Not all open space can be graded prior to all permits. County should allow at least 50% permits within the phase before the open space is stabilized and landscaped. SWM facilities cannot be completed prior to permits when building construction is in progress.
- Developer cannot be responsible for debris removal in area he does not control.
- Storm pipe design for 50 year life span may need RCP. Should be whatever is approved by DeIDOT.
- Concern regarding permission needed by downstream owners to tie to downstream pipe system when DSSR requirements for quantity controls are being met; requirement to obtain

easement when the emergency spillway discharges to a property that already receives drainage is onerous and may exceed property rights.

- **Maintenance**

- The staging plan should be integrated within the Record Landscape Plan, the appropriate document to note the use and maintenance
- maintenance corporation documents should include specific provisions for the party responsible for portions of open space that require multi-year establishment, and monitoring (e.g. stream restoration, invasive species eradication, reforestation)
- Open space areas that are phased in, as well as all recreation areas, should require provisions for compliance with the ADA within each phase.
- Historic structures to be preserved are part of a phase or subphase, their conditions should be tied to the completion of that phase or sub-phase.
- Duty to inform home buyer section - Condominium units should be expressly included.
- Maintenance escrow--In addition to providing funds for a two (2) year period, escrow funds should include the costs associated with the establishment period for restorative type work including but not limited to the monitoring, reporting, and maintenance associated with projects such as stream restoration, meadows, and reforestation as well as costs of private utilities. (RESPONSE: already included in code)
- consider setting minimum rates for the maintenance of the various portions of open space to reduce the instance of them being underfunded
- Need an inspection and enforcement mechanism for the lack of proper care and management of 'natural' areas and areas intended to return to a 'natural' state

- **Incentives/penalties to ensure timely completion of open space**

- Stronger bonding requirements, completion bonds, escrow, fines
 - County can construct them if not completed by the developer.
 - Require a performance bond of 125% by phase/sub-phase of project. Advance completion of open space as a % of building permits issued and require completion of any open space for which all lots/units adjoining it have been completed regardless of the total % of units completed or the phase the open space is within. (e.g. if 5 of 50 lots are complete but those are the only lots adjoining the open space, the open space should be required to be completed upon issuance of the CO for the 5th adjacent lot. Requirements of completing contiguous open space should extend to phasing within the Record Plan.
 - Developers should continue to have to post a bond. Perhaps increase this amount, but with the added option of turning the open space over to County. Services to manage said open space could then be funded by a neighborhood, sub-regional or regional maintenance district tax.
- Phased implementation / approvals.
 - Limits on # of units that can be constructed on an approved open space plan until the agreed upon open space plan has been implemented.
 - Do not allow a developer to begin home construction beyond the model homes until open space in that phase is complete.

- Tie issuance of building permits and Certificates of Occupancy to Open Space completion milestones.
- Tax break incentives on open space parcels for completing open space early. Density bonus on future projects for having a good record with turning over open space early. Discounted permit fees for remaining lots in the phase / community once open space is completed.
- Frequent communication with the developers, homeowners, & HOAs.
- Earlier, stricter enforcement & monitoring; specific construction and performance standards.
- Involve property owners early in planning and construction process; more assistance (logistical, financial) for HOAs & residents
- More involvement of landscape architects, knowledgeable professionals
 - could improve the survive-ability of plant materials, improve function of BMPs, and reduce maintenance.
 - Designs should be site and project specific not a cookbook approach.

Forest Conservation (Chapter 40)

- **General**

- Focus on the complex nature of a forest as opposed to a singular focus on trees.
- Use Maryland procedures for forest stand delineations as guidance. These procedures are based on well-established scientific principals and are not overly burdensome.
- Additional plans to be submitted at exploratory plan stage is huge costs for projects.
- May eliminate development on some properties as best forested areas are sometimes the best land for development
- provision for ‘where over fifty (50) percent of plants are listed.....’ should be revised to ‘where over fifty (50) percent of plant cover is listed’. Individual species or specimens may have a disproportional impact to an area.
- EIA report should not be considered “complete” without the response from required agencies (e.g. endangered species). This response is required for a full assessment of potential impacts to certain protected resources
- Regarding preservation of specimen trees: clarify where ‘recommendations for running, fertilization, and other means would be found and when such recommendations shall be required.
- Regarding “conservation design”, replicating and/or restoring the natural hydrology is more appropriate than “improve natural hydrology”
- Requiring all proposed plant material utilized to be native and indigenous to the State of Delaware takes away a lot of flexibility from the owner and designer and may not be consistent with the desired landscaping aesthetics.
- The definition of forest corridors has been expanded to include areas separated by breaks of up to 100 feet, thereby expanding the resources that must now be protected.
- Concern about added time/costs associated, including: Two iterations of the landscape plan (conceptual and final); additional forest and tree survey requirements proposed
- Factor in the importance of forest connectivity and habitat corridors
- It is impossible to really quantify the impact of the proposed changes, because the current proposal lacks many details
- In place of ‘A conceptual Landscape Plan’ consider ‘A Conceptual Landscape Character Plan’ to evolve the description of the landscape beyond plants; it would be a descriptive document

to illustrate exploratory level, materials, furnishings, pedestrian improvements, open space, restoration, as well as required planting areas.

- Distinguish landscape renderings separate from architectural
- A pre-application sketch plan review conference would now be required for all major land development projects, adding to the length of the overall development process.
- **Professional certification/submissions**
 - Allow landscape architects and other professionals with requisite expertise to submit plans
 - List of pertinent professionals should include clause 'for the resource being evaluated' added to clarify that the report may require multiple experts for the assessment of different resources.
- **Forest protection standards / Forest Habitat Value Assessment**
 - Exemption for forested natural resources that already receive 100% protection should not be extended to those proposing to be disturbed (requiring a variance). Where 100% protected forested areas are to be disturbed, the characterization would help the Department, RPATAC, and BOA better evaluate the severity of the impacts and appropriate mitigation.
 - Scoring criteria should include factors besides trees and include the balance of the biota comprising the forest ecosystem being evaluated. Most of our forest communities have a complex composition of canopy and understory trees, shrubs, and herbaceous material. There may be more species of value than just tree species.
 - Strength of this forest conservation ordinance derives from strength of FHVA
 - Include age requirement for key specimens within tier 1 (100-120 years as a minimum is likely appropriate) and tier system should also note disturbance levels in the general descriptions (e.g. Tier 1 = little disturbance and Tier 3 = relatively recent disturbance, 20-30 years since)
 - Use maximum proposed values in each range shown in the presentation for "Minimum Afforestation Ratio".
 - Establishing the CRZ for 'each tree' around the perimeter/edge of delineated forest is too onerous/high standard; establishing CRZ based on a DBH equal to the upper 10th percentile of the forest composition or a similar standard would be more realistic and cost effective
 - The forested area with the highest habitat value is often the highest value land for development as well, so these areas cannot always be preserved.
 - Requiring a Forest Habitat Assessment on every project represents a cost burden to all projects and will add time to the development process.
 - Would like clearer description of protection levels of the various forest types and whether tiers apply individually to a site or countywide
 - Adds cost to development
 - Require the maximum proposed value in each range for "Resource Protection Levels", especially for top Forest Tiers and for the Critical Natural Area (CNA) resources.
 - There is little to no indication of how the Tiers would be determined and if they would be applied consistently throughout the County or on a site-by-site basis. The details regarding the Tiers and levels of protection could have a significant impact on the required protection.
 - permitted reduction in protection levels should not be extended to Tier 1 forests. Additional reductions beyond the stated protection level should require a variance for this uncommon and valuable resource
 - The CRZ should be based upon conditions within 2 years of the application date (ensure that it is up to date for resubdivision or other plan changes)

- Should be noted that the drip line should be shown in addition to the CRZ and that the dripline shall be based upon the actual drip line during the growing season.
- Consider simplifying the evaluation process
 - definition of a tree be based on diameter, not on height
 - Have the critical root zone be based on the drip-line when defining the limits of forests and only utilize the multiplier (1.5 x DBH) when protecting specimen trees.
- **Afforestation**
 - Establishment of young forest/habitat takes 20+ years.
 - Change '(planting of new trees/forest)' to '(planting of new forest)'. Trees alone do not make a forest and since the standard is aimed at increasing forest habitat; should consistently refer to forest
 - Adding 'and open space certification as applicable' to the demonstrated compliance requirement provides an additional opportunity to catch compliance during the appropriate phase of completion is added.
 - The computations/certification for forest cover should occur with the conceptual plan, Record Landscape Plan, and Record Landscape Certification
 - Tree cover requirements for new landscaping should include a specific design age (i.e. 20 years) for the desired coverage
 - Afforestation ratios may result in limiting buildable areas.
- **Mitigation**
 - Provide a tree bank for remediation when standards cannot be met
 - Mitigation requirements should vary by tier. A standard of 2:1 for offsite mitigation seems insufficient for the higher tiers.
 - How extensive is the removal of invasive non-native species in the mitigation plan? Does it pertain to proposed development areas only? Does it apply to only trees or also include shrubs and other species? Does it only apply to parcels larger than 1 acre?
 - What is meant about elimination of invasive species in the Mitigation Plan, does it pertain to proposed development areas only, is it limited to woody invasive species or does it also include herbaceous species. Does it include all parcels or just parcels larger than 1 acre?
- **Preparation / Maintenance / Evaluation / Enforcement**
 - Best practice manual to help HOA's and contractors maintain actual areas
 - Require soil mitigation for landscape trees prior to turnover.
 - would like to see more specificity in the type of required protected area maintenance
 - It will be critical to determine a way to measure the potential for young forests to mature into thriving forests in the future.
 - Who would be responsible for enforcement?
 - Consider funding and/or potential penalties
 - We would like additional details about both penalties and enforcement toward elimination/management of invasive species
 - for 'Open space or site management plan', the third bullet should be changed from 'Non-native, invasive' to 'Non-native and/or invasive'. Some native plants can be highly invasive and undesirable. Additionally, open space or site management plans should include the requirements for monitoring and reporting for restored and/or enhanced areas (e.g. invasive species eradication which typically takes multiple seasons).

- Clause permitting native, naturally occurring weeds, should include a statement that plants on the DNREC Noxious Weeds List should be managed within natural resource areas.

Stormwater/Drainage (Chapter 12)

- **General**

- The efforts to achieve Water Quality Standards should first focus on minimization of site impacts, the reduction of impervious surfaces (i.e. no excessive parking areas), and restoration of forest and tree cover.
- Code should be updated to reflect current stormwater management practices.
- Sustainability of constructed communities should include watersheds as part of the community.
- Land should be put aside for sediment disposal from natural streams.
- Need alternative to Salt. Need a requirement to measure salt.
- Against the development of new closed systems when possible
- Hope to see that new environmentally friendly solutions are equally, if not more, accessible than some traditional systems.
- Need to proactively adjust regs to acknowledge climate change, less predictability and changing conditions; for example, use of the one hundred (100) year storm event as a standard for planning drainage and stormwater management.
- Clarification as to how to adhere to DelDOT policies and procedures will be helpful, especially the methods of documenting adherence during the construction process.
- The proposal seems to be aiming to eliminate the Standard Plan, which is an effective and cost-efficient process for many projects, which will now be driven to a longer, more-costly process.
- Proven non-structural stormwater management solutions should be included as part of the updated drainage code, along with retrofits in existing developed areas.
- Consider providing incentives to developers to direct their storm water management planners to go above and beyond required rules for runoff management
- Consider refining some terms / definitions (e.g. “economical”, replace “design engineer” with “design professional” or “professional engineer”, use NRCS definition of hydric soils, etc.)

- **Design Standards (SWM / Grading / Conveyance)**

- Proven non-structural stormwater management solutions should be included as part of the updated drainage code, along with retrofits in existing developed areas.
- In meeting the TMDL limitations for specific watersheds, the Department should provide guidance on the requirement and methods to address bacteria TMDLs. The prioritization of stormwater practices that achieve the best water quality will change by soil type and site conditions. A preferred BMP type may not be suitable for certain sites.
- The drainage code should be revised to reflect current requirements, including the Department of Land Use memorandum regarding structures over 480 square feet, patios/sidewalks/driveways over 200 square feet, and close the "Standard Plan <1 acre" loophole in state regulations.
- For the drainage code section alternative BMPs that prioritize restoration efforts might be better verbalized in the language; consider potential for restoration (e.g. resource protection

- standards or site capacity standards can be reduced/increased (respectively) if downstream degradation is repaired / restored and monitored for X number of years.)
- Concerned about items at County's sole discretion with no appeals process specified; elimination of possibility for waivers.
 - Language regarding drainage easements should expressly state who they are in favor of.
 - should reference what are approved methods for waterproofing, regarding Under Land Grading on Residential Lots
 - Prohibited Land Disturbing Activities should be more explicit as it relates to what can be done without an E & S
 - Regarding required approval by NCC for alteration of an approved plan, it should also state that it must be approved by the Professional Engineer for the project prior to approval by NCC.
 - 12.03.005.8: The required width of the riparian buffers should be included or the regulation that addresses riparian buffers should be cited. What will replace the 10'.
 - 12.04.: It should be clear whether the discharge is on or off site. Also, these facilities should be protected during construction by adequate erosion and sedimentation control. If the stormwater is discharged into a existing stormwater pipe, ditch or system like a roadway or existing pond, the design engineer shall provide analysis that the existing system can handle the additional stormwater.
 - 12.04.005: This pond code may be outdated for non-farm development. It is now the Natural Resources Conservation Service and they have updated their methodology
 - 12.05.006: 6.e: A 15' easement is very wide around facilities and can become a wasteland and an impediment to wildlife and habitat.
 - Is levy of fees at 100% after second submission allowed by DNREC regulations, since NCC is a delegated agency? Restricting standard plans could be arbitrary and puts uncertainty to small projects and burden of additional costs.
 - Stormwater management
 - Bio-retention facilities should be sized for a minimum 6" of ponding during the RPv event.
 - Design of vegetation for the entire stormwater facility should be by a registered Landscape Architect, not just that inundated by a 1-year frequency storm.
 - Grading:
 - 2% graded slopes are preferable at most sites, locations in the southern end of the county may be suitable for lower slopes if the subsoils permit rapid infiltration.
 - Requirement for minimum of 2% in pervious areas and other similar requirements for outlet structures may be very difficult to attain, especially in southern NCC
 - As-built surveys prior to the Certificate of Occupancy should include grading. The Department will need to determine how much the as-built conditions can vary from that of the submitted plan(s).
 - Require methods to ensure continuous stabilization while vegetative cover is established
 - As-built requirements should clarify where and how much the as-built condition can vary from the certified plan.
 - Concern about ability of dense projects to accommodate stockpile of soil
 - Requirement to provide 0.2-ft. fall across drainage structures could be difficult on flat sites.

- Concern about grading of the minimum open area to provide for 2% slope will require significant land disturbance when it is to be left in its natural state and is very flat or very steep.
 - Conveyance
 - Computations should be provided to demonstrate that the point discharge and receiving slope or waterway are stable with the maximum design flow for the conveyance system.
 - The requirement for adequate downstream conveyance should include a requirement to inquire with Public Works and the New Castle Conservation District as to any known downstream stability issues in a receiving waterway. Should the waterway have stability issues, the Department may consider requiring additional detention.
 - The degree to which a project must comply with bacteria TMDLs should be clarified
 - Existing channels/pipes and culverts are probably not designed for watercourse conveyance of the 100-year storms, so will be a significant hurdle to overcome.
- **Construction Review / Enforcement (As-built)**
 - Engineer certification of entire community makes PE construction manager. This will increase development costs significantly.
 - As-built surveys for stormwater conveyance systems should include a video record of the inspection to document pipe joint and pipe to structure joint fit and integrity. All as-builts should be certified by the appropriate design professional.
 - The cost to as-built all conveyance systems will significantly add to the cost of projects.
 - Requirement of providing a grading as-built prior to CO for a house will add cost for a project.
 - Additional costs for storm as-builts as this is requiring as-built of the of conveyance systems in open space.
 - The requirement for CCR's to be licensed by New Castle County seems excessive if the CCR is working for the professional design firm originating the design of the facility. If the firm is able to provide design and field review for a project, they should also be able to provide CCR services without additional licensure.
 - The requirement for the design professional to provide written documentation verifying that the constructed site is in accordance with their design and that it functions accordingly requires clarification.
 - If third submission is found to be without merit, applicant should pay 200%.
 - While updating references to DelDOT publications is a good idea, be aware that they frequently change their standard details. The code modifications should state which agencies standards apply relative to the approval date of the plans by the County.
 - A requirement that the design professional "shall provide written documentation verifying that the constructed site is in accordance with their design and that it functions accordingly" will require more than just a short visit to the site since you are requiring us to certify and seal such report.
- **Long-term Maintenance / Performance of BMP's (Effectiveness)**
 - Stormwater maintenance log for the owner should be provided as a template by the designer at the time of plan approval. Standardized forms should be provided by the Department such

that the designer could compile them for each facility along with a timeline and description of the elements to be inspected.

- The requirement for the County to remove 'any object or matter for aesthetic purposes' should not include naturally occurring materials such as logs, leaves, or brush. Naturally occurring woody debris are important for the ecology of streams and help to reduce erosive velocities
- Impervious:
 - I support the provision to treat 50% of pre-existing impervious for redevelopment sites and think it could be expanded or clarified to include treatment of a minimum of 50% for any site with greater than 20% existing impervious cover.
 - Treatment of 50% predevelopment impervious for redevelopments makes conversions of small sites impossible; counterproductive to incentivizing re-development.
 - Provisions for reduction of effective impervious for projects with over 20% existing impervious should be a minimum 50% reduction. Projects within a designated watershed SWQIP, such as the Christina River and its mandate for 7% reduction, should have the SWQIP's reduction added for any project in the watershed
- I would support doing amphibian surveys at our SWM's that have been created.
- All developments should have a qualified site manager that is responsible for erosion and sediment controls and maintaining stormwater facilities during construction.