Proposed Changes

May 19, 2014

TG-2: Site and Lot Development

Chapter 4: Site Design and Development

Proposal ID TBD	LogID 5189	401.0 Intent (Site Selection)
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Applicants should only get points for one of the categories and the points should have a greater spread, e.g., Low slope-5 points, Infill-10 points, Greyfield-17points, and Brownfield-27 points.	
Reason:	The wording “one or more of the following” is ambiguous. Are the points additive? For example, the Belmar development in Longwood CO, is an infill site, that was built on an old shopping center site so it is also a greyfield site. The former automotive repair center had some petroleum contaminants in the soils around it so it could also qualify as a brownfield. It also has low slopes. Would it get 27 points? That doesn’t seem right.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5230	401.4 Low-slope site
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	~~401.4 **Low-slope site.** A site with….selected.~~	
Reason:	: It is not clear why it is desirable to include a section that specifically encourages the use of low-slope sites. There are environmental trade-offs whether one selects a site that is relatively flat or one selects one with steeper slopes. In the former, there is a greater likelihood that the flat land could be high-quality farm land; in the latter, there is the possibility that construction will cause erosion. The problems associated with the former cannot be mitigated, whereas the problems associated with the latter can be prevented or mitigated through a variety of practices, including using pin foundations or terraces that stabilize the slopes – and other practices for which points are available elsewhere in Chapter 4 (see 403.3). Also, if the slope is already heavily eroded, structures built on the slope may accrue a net environmental gain by reducing slope movement. Moreover, the 5 points made available through this credit seem very high. Flat areas are the easiest for a builder to build upon, so a builder may be rewarded simply for doing what comes easiest, not because it was the environmentally sound approach to take (and even when the site is quality farmland, a wetland, a surface water buffer, or other environmentally sensitive area). And, as building on a low-slope area is unlikely to provide anything close to the environmental benefits provided by building on an infill, greyfield, or brownfield site, the number of points attached to it should be much lower (with at delta of at least 10 points), if any points are attached to it at all.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5208	403.1 Natural resources
Submitter:	Wes Sullens, StopWaste of Alameda County	
Requested Action:	Add new as follows	
Proposed Change:	**New section:** Invasive plants are removed from the site.	
Reason:	Invasive plants do enormous environmental and economic harm, as stated in my other comments for sections 403.6 and 503.5. The development of a site creates an opportunity to remove invasive plants from an area of land, thus removing the threat of their spread to neighboring areas and providing a service to the community and local ecosystem.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5072	403.10 Existing and recycled materials
Submitter:	Robert Hill, Home Innovation Research Labs	
Requested Action:	Revise as follows	
Proposed Change:	**Existing and recycled materials.** Existing pavements, curbs, and aggregates are salvaged or reincorporated into the development or recycled asphalt or concrete materials are used ~~as follows:~~ (Points awarded for every 10 percent of total construction and demolition materials that are reused, ~~deconstructed,~~ and/or salvaged. The percentage is consistently calculated on a weight or volume or cost basis.) ~~(1) Existing pavements, curbs, and aggregates are salvaged or reincorporated into the development.~~ ~~(2) Recycled asphalt or concrete is utilized in the project.~~	
Reason:	It was not clear in the 2012 text if the percentage for recycled asphalt could be combined with the percentage or salvaged/reincorporated materials of if 10% of each type was needed for the points.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5237	403.11 Environmentally sensitive areas
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Move this section to 401 (Site Selection) and then tier the points as follows: (1) Reward the highest level of points for avoiding environmentally sensitive areas. (2) Allow a somewhat lower number of points when a site with environmentally sensitive areas is selected and any sensitive areas damaged by construction are fully restored to their pre-construction ecosystem functions and services. (No site can truly be restored to its pre-construction state, even when there is an attempt to do so; thus the lower number of points.) (3) Allow an even fewer number of points when environmentally sensitive areas on the site that are degraded or disturbed by construction are enhanced or the damage is otherwise mitigated.	
Reason:	These points pertain to an important element in site selection: avoiding environmentally important areas. Its importance should be highlighted earlier in the chapter as part of the site selection section. Moreover, restoration and mitigation achieve different results and should not be rewarded the same level of points.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5231	403.5 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete and substitute as follows	
Proposed Change:	~~(2) Vegetative swales…infiltration features are used.~~ (2) One or more of the following features is included on the site or structure to allow for on-site infiltration of water: vegetative swales, bioretention systems, rain gardens, wetlands, french drains, drywells, and vegetative roofs.	
Reason:	This revised language clarifies intent of the credit and includes additional practices for which builders should receive credit.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5232	403.5 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	For subpart (3), increase the points associated with items (b) and (c), or at least increase them relative to item (a), e.g., 6 points for (b) and 10 points for (c).	
Reason:	The expense and effort dedicated to the much higher portions of permeable materials, as well as the significantly higher potential for reducing runoff, should be rewarded by a greater step up in the point system.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5233	403.5 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Subparts (4) and (5) should each offer a number of points significantly higher than that of any other single item under 403.5, e.g., 25 points. These points should also not be additive with each other nor with the other items under 403.5, because (4) and (5) would require an array of approaches that would likely be redundant with most of the other items.	
Reason:	Achievement of (4) or (5) is a commitment to preserving site hydrology and reducing the impact of the development on water quality. Such an investment should be rewarded with higher points as an incentive for reaching for such high levels of environmental performance. Moreover, items (4) and (5) are comprehensive for the site, whereas (3) only addresses hardscape areas and (1), (2), and (6) only address some landscape features or components that could be incorporated into the landscape design. In the current version of NGBS, items (4) and (5) are rewarded with a point less than is (3)(c), which is quite at odds with the potential benefits that could be achieved under the respective items. The environmental benefits of (4) and (5) are likely much higher than those of all the other items in 403.5, and should be rewarded proportionately.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5235	403.5 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(6) Stormwater management features/structures are designed for the reduction of nitrogen, phosphorus, ~~and~~ sediment~~.~~, and pathogens.	
Reason:	Pathogens are of concern in many areas. Low impact development practices that use soil-based infiltration systems can reduce pathogen loadings to receiving waters.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5236	403.6 Landscape plan
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(4)(a) 0 percent ~~or EPA WaterSense Water Budget Tool is used to determine the maximum percentage of turf areas~~ Create a new credit that rewards points for the use of the WaterSense Budget Tool, e.g.: (#) The landscape is designed to reflect the water use budget determined through the EPA WaterSense Water Budget Tool. Suggested point value: 6	
Reason:	The WaterSense Budget Tool can be used to design a landscape that reflects local climate conditions. The components of the design that are considered need not be limited to turfgrass. Thus, it makes sense to move the WaterSense Budget Tool into its own credit, independent of choices made on turfgrass.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5255	403.6 Landscape plan

Submitter: Greg Johnson, Greg Johnson Consulting

Requested Action: Delete and substitute as follows

Proposed Change:

403.6 Landscape plan. A landscape plan is developed to limit water and energy use incommon areas while preserving or enhancing the natural environment utilizingone or more of the following. Examples of techniques may include, but are notlimited to, one or more of the following:

(1)	A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	~~5~~ 6
(2)	On-site native or regionally appropriate trees and shrubs are conserved, maintained and reused for landscaping to the greatest extent possible.	~~5~~ 6
(3)	Turf grass species, other vegetation, and trees that are native or regionally appropriate for local growing conditions are selected.	~~4~~ 6
~~(4)~~	~~The percentage of all turf areas are limited as part of the landscaping.~~	-
-	~~(a) 0 percent~~	~~4~~
-	~~(b) greater than 0 percent to less than 20~~	~~3~~
-	~~(c) 20 percent to less than 40 percent~~	~~2~~
-	~~(d) 40 percent to 60 percent~~	~~1~~

Duplicative proposed change to Section 503.5:

503.5 Landscape plan. A landscape plan for the lot is developed to limit water andenergy usewhile preserving or enhancing the natural environment. (Where "front" only or "rear" only plan isimplemented, only half of the points (rounding down to a whole number) areawarded for items 1-6)

(1)	~~Where a lot is less than 50% turf, a~~ A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	~~5~~ 6
(2)	Turf grass species, other vegetation, and trees are selected and specified on the lot plan that are native or regionally appropriate for local growing conditions.	~~4~~ 6
~~(3)~~	~~The percentage of turf areas that is designed to be mowed is limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.~~	-
-	~~(a) 0 percent~~	~~4~~
-	~~(b) greater than 0 percent to less than 20~~	~~3~~
-	~~(c) 20 percent to less than 40 percent~~	~~2~~
-	~~(d) 40 percent to 60 percent~~	~~1~~
	Practices 4 through 6 unchanged	-
(6)	Vegetative wind breaks or channels are designed to protect the lot and immediate surrounding lots as appropriate for local conditions.	~~4~~ 5

Reason: The Outdoor Power Equipment Institute recommends striking all of Sections 403.6. (4) and 503.5 (3). We additionally request that the points for turf limitations in Sections 403.6. (4) and 503.5 (3) be reallocated to other more appropriate sustainable practices within their respective sections.

The inclusion of disincentives for areas of turfgrass conflict with the intent of the NGBS and aren't consistent with other trends in landscape regulation. The 'less turf-more points' formula suggests a negative environmental value to turfgrass and completely discounts its positive social, safety, and environmental attributes. Limiting turfgrass also limits builder flexibility in installing landscapes for the best site specific environmental performance and inhibits offering a green residential building able to compete on an apples-to-apples basis for curbside appeal with traditional residential buildings.

There is extensive scientific documentation of the valuable environmental ecosystem services that can be provided by turfgrass; (stormwater management, biomass accumulation, replacement of hardscapes, bioremediation, carbon sequestration, environmental cooling, nitrogen and phosphorous capture, fire safe site design, atmospheric cleansing, control of water and wind erosion, oxygen production), meaning that an incentive for the limitation of its use is unwarranted. This is particularly true considering the abilities of turfgrass to go dormant in periods of drought while still providing some of its ecosystem services and to be ready to provide the balance when precipitation or wastewater is again available.

Consider, for example, the cooling benefits of turfgrass. In some instances, ground level temperatures of grass-covered land areas are 30 to 40 degrees cooler than bare soil. They are also 50 to 70 degrees cooler than hardscape (asphalt or concrete) areas. FN1. Reducing turfgrass increases the 'heat island' effect which in turn increases demand for energy.

	In addition to its cooling properties, managed turfgrass plays a positive role in our efforts to confront climate change. A well maintained, growing lawn that is fed by nutrients from grass clippings sequesters carbon from the atmosphere and helps to minimize the property's carbon footprint. FN2. Reducing turf areas and replacing them with mulch or hardscape makes active carbon 'sinks' inactive, potentially increasing the carbon released back into the atmosphere by exposing soils or using non-growing, decaying materials such as mulch. These alternative methods can be aesthetically appealing and help control water run-off and use, but they do not share the turfgrass benefit of contributing to the reduction of greenhouse gas emissions. It should be noted that a complete absence of scientific foundation was offered when turfgrass disincentives were suggested through public comment to the initial draft of the NGBS when the commenter merely referred to a few local green building programs in arid regions and stated: "*Seems reasonable to give credit for both limited grass*, as well as almost or no grass." Similarly, in the last cycle of ICC-700, the EPA comment to create stronger disincentives for turfgrass installation was presented as arbitrary targets with no scientific justification. In the EPA comment the statement was made that *"EPA supports the inclusion of a practice restricting turf areas in landscaping…"* This conflicts with the EPA's August 12, 2011 public comment to GG 243-11 of the IgCC in which the agency asks for turf area restrictions to be eliminated, saying instead that *"… a water budget approach would be preferable to guide landscape design, irrespective of the source of irrigation…"* It also conflicts with EPA's 2012 removal of the 40% turf limitation from the WaterSense Specification as well as the White House's Council on Environmental Quality's October 31, 2011 Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes which has no prescriptive turf limitation and in fact recommends the use of turf for certain circumstances. This philosophical approach parallels the action of the International Code Council's membership which overwhelmingly rejected all turf limitations at the final action hearings for the 2012 IgCC on November 3, 2011. The best way to facilitate a market approach to green building demand is to offer features that the public wants while providing buildings and sites with superior environmental performance. There was extensive discussion during the development of the first edition of the NGBS about prohibiting fire places and swimming pools from green residential buildings or awarding 'negative points' to buildings that offered those amenities. The committee wisely rejected approaches that created disincentives to demand for green residential buildings. Turfgrass is a similar amenity. For many people the maintenance of a lawn is a hobby of choice and a matter of pride. It's also affordable, for both installation and maintenance, which can help foster more green building demand. Simply, many people like turfgrass and many would want to own or live in a green residential building with the amenity. They should not be penalized for wanting a place for their children and pets to engage in healthy play. Beyond amenities, turfgrass has larger societal benefits as well. It is the superior vegetative surface material for athletic activity, both organized and informal. It is unparalleled as a vegetative surface for viewing performances and other outdoor assembly uses and social gatherings. It is the most accessible traveling surface, other than hardscapes, as it allows for unobstructed, omni-directional movement. Where public safety is a concern, it is an inviting feature because it doesn't permit undesirable lurking making it a key component of crime prevention through environmental design. For fire safety purposes turfgrass serves as defensible space for compliance with the Wildland Urban Interface Code and, when used with Grasscrete or similar materials, is suitable for use as a fire access lane or to replace other hardscapes. Finally, the division of points in our proposed change doesn't reduce the total amount of points available for providing a landscape plan designed to limit water and energy use. Instead those points are allocated to other practices that demonstrably preserve or enhance the natural environment and which can benefit from the inclusion of turfgrass as an environmentally sound landscape strategy. Note that the greatest point increase is given to providing vegetation that is native or regionally appropriate for local growing conditions which is the best option in these sections for fostering water efficiency. FN1. Beard, J.B. and R.L. Green. 1994. The Role of Turfgrasses in Environmental Protection and Their Benefits to Humans. Journal of Environmental Quality. Vol 23:3 FN.2 Sahu, R. 2008. Technical Assessment of the Carbon Sequestration Potential of Managed Turfgrass in the United States. Outdoor Power Equipment Institute (OPE/). Alexandria, VA. **[SEE ATTACHMENTS TO PUBLIC COMMENTS FOR ADDITIONAL INFORMATION]**
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Proposal ID TBD	LogID 5258	403.6 Landscape plan

Submitter:	Greg Johnson, Greg Johnson Consulting
Requested Action:	Revise as follows
Proposed Change:	**403.6 Landscape plan.** A landscape plan is developed to limit water and energy use incommon areas while preserving or enhancing the natural environment utilizingone or more of the following. Examples of techniques may include, but are notlimited to, one or more of the following:

	Practices 1-3 are unchanged	
(4)	Turfgrass is over-seeded with not less than the equivalent rate of one-half pound per acre (.22 kg/.405 ha) of white clover (trifolium repens) or similar flowering maintenance tolerant herbaceous plants.	5
~~(4)~~	~~The percentage of all turf areas are limited as part of the landscaping.~~	-
-	~~(a) 0 percent~~	~~4~~
-	~~(b) greater than 0 percent to less than 20~~	~~3~~
-	~~(c) 20 percent to less than 40 percent~~	~~2~~
-	~~(d) 40 percent to 60 percent~~	~~1~~

Duplicative proposed change submitted to Sec. 503.5.

Reason:

I propose the elimination of the questionable practice awarding of points for the limitation of areas of turfgrass and to instead award points for the inclusion of white clover to areas of turfgrass. This measure will improve the wildlife habitat value of turfgrass systems installed on ICC-700 compliant sites while maintaining the durability, carbon sequestration, environmental cooling, atmospheric cleansing, control of water and wind erosion, and oxygen production functions of the turfgrass component.

The addition of white clover to turfgrass is not a new idea; it was commonly added to lawns in the first half of the 20th century. Returning to this practice is suggested as an important option for sustainable turfgrass systems where the performance of the turfgrass materials and white clover are complimentary.

This approach is akin to that taken with structural building materials; we do not limit the use of steel in multi-story buildings because it yields in intense fire conditions – we install it as a component of a system with some sort of fireproofing added; we do not limit the use of concrete because of its permeability – we add water and vapor resistive barriers to create an assembly; we do not limit the use of exterior wood – we treat the wood with some other material to resist rotting. By adding flowering plants to the assembly an insect and bird friendly turfgrass system is provided.

The addition of white clover to turfgrass systems is consistent with the “bee lawn” research of the University of Minnesota’s entomology and horticulture departments.[1, 2] This research provides the basis for turfgrass systems that support pollinating arthropods and other fauna.

Research in Illinois by Dr. John Hilty indicates that 53 pollinating insect species, (33 long tongued bees, 14 short tongued bees, 6 wasps,) and 35 non-pollinating insects (9 flies, 14 butterflies, 10 skippers, 2 moths) suck the nectar of white clover.[3] Hilty also reports that many moth caterpillars, 4 species of butterfly caterpillars, and the Flower Thrip all use clover as a food source.[4]

In other white clover faunal associations Hilty states that *“the foliage and seedheads are eaten by the Ruffed Grouse, Greater Prairie Chicken, Wild Turkey, and Ring-Necked Pheasant. Some songbirds occasionally eat the seeds, including the Horned Lark and Smith Longspur (winter only). Various small mammals find the foliage and seedpods very attractive as a source of food, including the Cottontail Rabbit, Groundhog, Thirteen-Lined Ground Squirrel, and Meadow Vole. Large hoofed animals, such as the White-Tailed Deer, cattle, horses, and sheep, also graze on the foliage of clovers.”*[5]

Similarly, the USDA Forest Service identifies white clover as *“an excellent forage plant for livestock and wildlife. The leaves and flowers are grazed by grizzly bear, moose, mule, white-tailed deer, and blue grouse. It comprises nearly 6 percent of the annual forage of the white-footed vole. The seeds are eaten by the northern bobwhite, bufflehead, American coot, sage grouse, ruffed grouse, sharp-tailed grouse, horned lark, mallard, gray partridge, greater prairie chicken, willow ptarmigan, American pintail, California quail, and American robin.”*[5]

Given white clover’s global distribution, (widely naturalized in the temperate regions of the world; native of Europe, North Africa, and western and central Asia;[6] present in all 50 states and provinces of Canada[7]) its habitat value to local wildlife is orders of magnitude beyond that identified by Dr. Hilty in Illinois or to the North American species reported by the USDA Forest Service.

	Besides wildlife nutrition, white clover is edible by humans with minimal preparation. It is high in protein and used for soup and salads and tea. It also can be made into flour. White clover's potential contribution to urban agriculture furthers its sustainability quotient.[8] White clover is a nitrogen fixing plant, capturing nitrogen from the atmosphere and making it available as fertilizer to other plants when it dies; a sustainability boon in addition to its habitat and urban agriculture values. According to multiple sources it remains green even during drought when turfgrass is dormant; eliminates the need for herbicides because it suppresses weeds; virtually eliminates the need for fertilizer when incorporated with turfgrass because of its nitrogen contribution; requires no pesticides; and smells good. The standard seeding recommendation by the USDA Natural Resources Conservation Service is 2 lbs. per acre (43,560 ft^2) for pastures for 50% coverage.[9] A rate equivalent to 1/2 pound per acre is suggested as appropriate for overseeding lawns. The offered performance alternative to white clover, *"similar flowering maintenance tolerant herbaceous plants"* helps address sites where white clover is not ideally suited. Adding language to the Commentary to provide guidance for the selection of white clover alternatives is strongly indicated. According to the USDA's Natural Resources Conservation Service neither the Federal government nor any state government identifies white clover as a noxious weed or invasive plant although, as is for many beneficial plant species, proper management is recommended for control.10 1. http://blog.lib.umn.edu/efans/ygnews/2012/03/a-bee-lawn-how-to-have-an-inse-1.html 2. http://turf.umn.edu/category/bee-lawn/ 3. www.illinoiswildflowers.info/flower_insects/plants/white_clover.htm 4. http://www.illinoiswildflowers.info/weeds/plants/white_clover.htm 5. http://www.fs.fed.us/database/feis/plants/forb/trirep/all.html 6. http://www.efloras.org/florataxon.aspx?flora_id=110&taxon_id=200012344 7. http://plants.usda.gov/core/profile?symbol=TRRE3 8. http://en.wikipedia.org/wiki/Trifolium_repens 9. http://plants.usda.gov/factsheet/pdf/fs_trre3.pdf 10. http://plants.usda.gov/java/noxComposite **[SEE ATTACHMENTS TO PUBLIC COMMENTS FOR ADDITIONAL INFORMATION]**
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Proposal ID TBD	**LogID 5320**	**403.6 Landscape plan**
Submitter:	Craig Conner, Building Quality	
Requested Action:	Delete without substitution	
Proposed Change:	403.6 ~~(4)~~	
Reason:	Item 3 makes sense, when it says use appropriate vegetation; presumably including low water grass. Item 4, limiting turf areas, does not. We want to limit water use, not limit grass.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5206	403.6 Landscape plan
Submitter:	Wes Sullens, StopWaste of Alameda County	
Requested Action:	Revise as follows	
Proposed Change:	"~~Turf grass species, other vegetatio~~n, In areaswhere turf grass is not used, non-invasive vegetation and trees that arenative or regionally appropriate for local conditions are selected."	
Reason:	1) The fourth item under 403.6 rewards points for the use of turf grass in a manner that is consistent with local water availability. Thus, the selection of a turf grass that is "regionally appropriate" in item 3 is redundant with item 4, and could lead to double-rewarding of credit points for the use of turf. Such encouragement of the use of turf grass clearly is inconsistent with the goals of this section. 2) Because turf grasses are regularly mown, they do not provide the height nor flowers that provide food and habitat for pollinators and other wildlife. Therefore, it does not make sense to group them with other types of vegetation. In addition, turf grasses have shallow root depths, and are not as effective at sequestering carbon, retaining water, creating porous soils, or fostering biota, as compared to other plant species with deeper root systems. 3) Turf grass requires a unique maintenance regime that creates a level of pollution risk that is higher than that created by other types of vegetation – yet another reason not to group it with non-turf types of vegetation. 4) The reasons to avoid invasive plants are many: • Invasive plants produce greater amounts of waste. Invasive plants tend to grow faster, spread beyond their original planting areas, and result in greater amounts of green waste than non-invasive species. Additionally, effective eradication of invasive plants often requires the use of herbicides which are classified as hazardous waste and must be disposed of properly at end of life. Avoiding invasive plants is a waste prevention measure for cities and counties who regulate and operate hazardous waste facilities and landfills. • Invasive plants have serious environmental impacts, including increased frequency and intensity of fire regimes in certain climes, altered soil composition, lack of dissolved oxygen in waterways, changes to natural hydrologic cycles, and threaten wildlife. While the effects of invasive plants are most severely felt in the rural areas and wildlands, evidence is that most invasive plants currently causing havoc in the west started as horticultural plantings in urban areas. Therefore, land development in urban and suburban areas have a direct correlation with invasive plant exposure throughout the region. • Management of invasive plants is expensive. In California for example, the cost of control, monitoring, and outreach is conservatively estimated to be $82 million a year (not including indirect costs associated with lost agricultural yields, increased severity of wildfires and floods, loss of productive range and timber lands, reduced land values, damage to infrastructure, and degraded recreational opportunities). • Avoiding invasive plants via building standards is effective and low-cost. Experts agree that prevention is the most effective and resource-efficient way to combat the spread of invasive plants. By requiring construction projects to avoid invasive plant species, demand for invasive plants from nurseries and suppliers will diminish over time. Further, a wide variety of alternatives to invasive plants is easily available with no cost difference, resulting in no cost increase for the design and construction industry.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5264	405.0 Intent (Innovative Practices)
Submitter:	Matt Belcher, Verdatek Solutions	
Requested Action:	Add new as follows	
Proposed Change:	**405.11 Resilience** Site incorporates one or more of the following resilience options, as applicable. 1. The development of portions of the site(s) located within flood hazard areas is avoided as follows: (a) Portions of sites located within flood hazard areas are avoided. (b) Portions of sites located within areas subject to a 0.2% annual chance of (500-year) flood are avoided.	
Reason:	With the focus on future enhancement of the model codes to provide for enhanced "Resiliant" construction, It is an opportunity to include reference in this "above code" standard to incentivise innvotaive practices and process that will demonstrate best practices for eventual application into the model codes.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5261	405.1 Driveways and parking areas
Submitter:	Greg Johnson, Greg Johnson Consulting	
Requested Action:	Revise as follows	
Proposed Change:	**405.1 Driveways and parking areas.** Driveways and parking areas are minimized or mitigated by one or more of the following:	
	Practices 1-3 unchanged	
	(4) Closed cell grass paving systems are utilized to reduce the footprint of surface driveways, fire lanes, streets and parking areas.	
	(a) 25 % to less than 50%	**4**
	(b) 50% to 75%	**5**
	(c) greater than 75%	**6**
Reason:	Closed cell grass paving systems offer multiple environmental benefits; being completely pervious for stormwater management and offering not just passive heat mitigation, but active cooling through transpiration. Grass paving also sequesters carbon and produces oxygen. These multiple benefits deserve recognition as an innovative practice.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5202	405.1 Driveways and parking areas
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(1) Off-street parking area are shared or driveways are shared; …rear-loaded garages. No more than 20 percent of all single family homes shall have front-loaded garages, unless the topography prohibits rear loading. Front-loaded garages for detached homes should be placed a minimum of 15 feet behind of the front façade of the house.	
Reason:	The high number of curb cuts caused by front loaded garages creates a safety hazard for pedestrians with too many car pedestrian conflicts. This makes the streetscape unwalkable; discouraging active transportation modes. Snout houses with garage doors prominently displayed create an inhospitable environment for walking. People feel safer when the design of the building façade gives the impression of more eyes on the street.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5190	405.2 Street widths
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete and substitute as follows	
Proposed Change:	~~(2) A waiver was secured by the developer from the local jurisdiction to allow for construction of streets below minimum width requirement.~~ (2) The subdivision has a minimum street connectivity standard of 90 intersections per square mile.	
Reason:	Narrow street widths do not work if you use a dendritic street pattern. Without a grid, emergency vehicles can get trapped on streets behind large vehicles. A grid allows multiple pathways to emergency site. A grid also reduces the average walking and biking trip length encouraging active transportation. Your use of the terms collector and local access reinforce the dendritic typology. The Standard of 90 intersections is a prerequisite of LEED-ND version 2009.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5191	405.4 Zoning
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	~~(1) Innovative zoning . . . .~~ Move the points to 405.7.	
Reason:	The innovation is zoning is not important for a green community. The design that results from the zoning changes affects how green the community is. Don't focus on process, focus on outcomes.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5192	405.4 Zoning
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	~~(2) An Increase to the permissible . . .~~	
Reason:	An increase in height to promote density is redundant with section 405.7 Density.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5193	405.4 Zoning
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete and substitute as follows	
Proposed Change:	~~(3) Place-based amenities such as plazas, squares, and attached greens located around civic, commercial, and mixed-use property are accessible by sidewalks....~~ (3) Provide active open space of a minimum of 1/6 acre within ¼ mile walk of 90 percent of planned and existing units and entrances to no residential buildings. The open space must be accessible to the public and be clearly signed for public access. Squares, Parks, Paseos and Plazas all meet this criterion.	
Reason:	The existing text is too vague. There needs to be quantitative measures on the level of amenities. Most open spaces are underused because of bad design. Preserve the social aspects of publically accessible open space. The open space must be accessible to the public and be clearly signed for public access. Joint open space should not be designed to be viewed as a continuation of existing private backyards.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5194	405.6 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	~~(1) " or within 5 miles of mass transit station with parking".~~	
Reason:	90% of criteria air pollutants are emitted in the first 2 minutes of a cold start of a vehicle. Driving to transit does not greatly improve air quality.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5195	405.6 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete and substitute as follows	
Proposed Change:	~~(3) Walkways, bikeways, street crossings, and entrances designed to promote pedestrian activity are provided. New buildings...~~ (3) Create a grid of sidewalks and paths that provide a minimum level of connectivity of at least 90 intersections per square mile.	
Reason:	Walking as active transportation requires direct pathways and multiple routes. It is necessary to include a minimum sidewalk, path intersection connectivity to ensure multiple pathways, and short and relatively direct routes.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5196	405.6 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(4) Bicycle parking and racks are indicated on the site plan and constructed for mixed-use, multi-family buildings, and/or common areas, with a minimum of 1 bicycle parking space per residential unit and 5,000 square feet of office space.	
Reason:	A minimum number of spaces is essential to ensure that a sufficient number of spaces is provided for occupants and to encourage bicycling. These numbers are taken from LEED 2009.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5197	405.6 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Reduce Subparts (5) and (6) to 3 points each and increase subparts (1) as revised and (2) to 6 and 10 points respectively.	
Reason:	Bike and car sharing depend on a network larger than the subdivision scale. It is difficult for the applicant to ensure an adequate size of transportation sharing system to ensure feasibility and use. Research by Ewing and Cervero demonstrate that “access to transit” is second only to “siting in a central location” in its impacts at reducing Household vehicle miles traveled.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5198	405.8 Mixed-use development
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete and substitute as follows	
Proposed Change:	Delete the section in its entirety and replace with the following: <u>(1) If the majority of the project is residential, provide a least 10% square footage on non-residential uses. (2) For single use sites of 20 acres or less, 80% of the units should be within ¼ mile walk of 5 non-residential units with no more than two of the same type of use being counted.</u>	
Reason:	The mix of uses is in need of better quantification.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5199	501.1 Lot (Lot selection)
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Applicants should only get points for one of the categories and the points should have a greater spread, e.g., (1) Certified site 12, (2) Infill-10 points, (3) Greyfield-20points, (4) Brownfield-39 points, and (5) Low slope-5 points.	
Reason:	Are the points earned in this section additive? The wording “one or more of the following” is ambiguous. For example, the Belmar development in Longwood CO, is an infill site, that was built on an old shopping center site so it is also a greyfield site. The former automotive repair center of the former shopping center had some petroleum contaminants in the soils around it so it could also qualify as a brownfield. It also has low slopes. Would a lot in that project it get 33 points? That doesn’t seem right. They should only get points for one of the categories and the points should have a greater spread as suggested.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5238	501.1 Lot (Lot selection)
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	~~(5) A lot with an average slope calculation….~~	
Reason:	It is not clear why it is desirable to specifically encourage the use of low-slope lots. There are environmental trade-offs whether one selects a lot that is relatively flat or one selects one with steeper slopes. In the former, there is a greater likelihood that the flat land could be high-quality farm land; in the latter, there is the possibility that construction will cause erosion. The problems associated with the former cannot be mitigated, whereas the problems associated with the latter can be prevented or mitigated through a variety of practices, including using pin foundations or terraces that stabilize the slopes – and other practices for which points are available elsewhere in Chapter 5 (see 503.2). Also, if the slope is already heavily eroded, structures built on the slope may accrue a net environmental gain by reducing slope movement. Moreover, the 9 points made available through this credit seem extremely high. Flat areas are the easiest for a builder to build upon, so a builder may be rewarded simply for doing what comes easiest, not because it was the environmentally sound approach to take (and even when the site is quality farmland, a wetland, a surface water buffer, or other environmentally sensitive area). And, as building on a low-slope area is unlikely to provide anything close to the environmental benefits provided by building on an infill, greyfield, or brownfield site, the number of points attached to it should be much lower (with at delta of at least 10 points), if any points are attached to it at all.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5298	501.2 Multi-modal transportation
Submitter:	aaron gary, US-EcoLogic	
Requested Action:	Add new as follows	
Proposed Change:	Add additional option under 501.2 for projects that are located near employment opportunities worth 5 points. Use metric Jobs per Square Mile (threshold to be determined). (This metric is easily verified through Walkscore Streetsmart) (5) A lot is selected near employment opportunities...	
Reason:	Rewards walkability and access to community resources. Rewards mixed use development. Aligns with existing options 1 through 4.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5200	501.2 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Delete without substitution	
Proposed Change:	In subpart (1): ~~or within 5 miles of mass transit station with parking.~~	
Reason:	90% of criteria air pollutants are emitted in the first 2 minutes of a cold start of a vehicle. Driving to transit does not greatly improve air quality.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5201	501.2 Multi-modal transportation
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(3) A lot is selected within one-half mile (805 m) of six or more… <u>No more than two each of the following use category can be counted toward the total: Recreation, Retail, Civic, and Services.</u>	
Reason:	Having only 5 parks nearby will not generate a high Walkscore ™. A diversity of uses is necessary to create a genuine walkable environment.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5209	503.1 Natural resources
Submitter:	Wes Sullens, StopWaste of Alameda County	
Requested Action:	Add new as follows	
Proposed Change:	**New section:** Invasive plants are removed from the lot.	
Reason:	Invasive plants do enormous environmental and economic harm, as stated in my other comments for sections 403.6 and 503.5. The development of a lot creates an opportunity to remove invasive plants from an area of land, thus removing the threat of their spread to neighboring areas and providing a service to the community and local ecosystem.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5066	503.1 Natural resources
Submitter:	Philip LaRocque, LaRocque Business Management Services, LLC	
Requested Action:	Revise as follows	
Proposed Change:	503.1(5) All tree pruning on-site is conducted by Certified Arborist or other qualified professional.	
Reason:	Both the natural resource inventory and landscape plan in the standard allows for "qualified professional" reference and the same should be allowed for tree-pruning. Requiring only a Certified Arborist is simply too proprietary and anti-competitive. I have worked with many builder clients to meet this proprietary practice for 3 points with no success since it seriously limits competition.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5057	503.3 Soil disturbance and erosion
Submitter:	Robert Hill, Home Innovation Research Labs	
Requested Action:	Revise as follows	
Proposed Change:	(1) Construction activities are scheduled to ~~minimize length of time that soils are exposed~~ such that disturbed soil that is to be left unworked for more than 21 days is stabilized within in 14 days.	
Reason:	“Minimize” is a very non-specific term that is open to a wide range of interpretation. It does not specific to what extent the minimization is needed in order to qualify for the points. A more definitive practice is needed. The suggested revision is consistent with the practice in 504.3(6).	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5130	503.3 Soil disturbance and erosion
Submitter:	Robert Hill, Home Innovation Research Labs	
Requested Action:	Revise as follows	
Proposed Change:	**Soil disturbance and erosion.** Soil disturbance and erosion are minimized by one or more of the following: (also see Section 504.3)(1) Construction activities are scheduled to ~~minimize length of time that soils are exposed~~ such that disturbed soil that is to be left unworked for more than 21 days is stabilized within in 14 days.	
Reason:	"Minimize" is a very non-specific term that is open to a wide range of interpretation. The current practice does not specify to what extent the minimization is needed in order to qualify for the points. A more definitive practice is needed. The suggested revision is consistent with the practice in 504.3(6).	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5273	503.3 Soil disturbance and erosion
Submitter:	Shelly Leonard, Green Space Consultants LLC	
Requested Action:	Add new as follows	
Proposed Change:	(1) Construction activities are scheduled to minimize length of time that soils are exposed following the 14 day EPA guideline. Multifamily projects should have a schedule that minimizes time that soil is exposed and subject to erosion and is implemented during the construction process.	
Reason:	Include major factors and provide as much clarity as possible in the practice description.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5239	503.4 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	….rain gardens, bioretention systems, vegetative roofs, or similar infiltration systems.	
Reason:	This adds a couple common type of infiltration approaches for which builders should receive credit.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5240	503.4 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	For subpart (3), increase the points associated with items (b) and (c), or at least increase them relative to item (a), e.g., 6 points for (b) and 10 points for (c).	
Reason:	The expense and effort dedicated to the much higher portions of permeable materials, as well as the significantly higher potential for reducing runoff, should be rewarded by a greater step up in the point system.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5241	503.4 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	For subpart (4), greatly increase the point allowance, e.g., to 10 points.	
Reason:	A vegetated roof on a residence is expensive and in some ways more difficult to design and install than that on a commercial building due to the size of roof and because most homes have sloping roofs.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5242	503.4 Stormwater management
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Subparts (5) and (6) should offer a number of points significantly higher than that of any other single item under 503.4, e.g., 20-25 points. These points should also not be additive with each other nor with the other items under 403.5, because (5) and (6) would require an array of approaches that would likely be redundant with most of the other items.	
Reason:	Achievement of (5) or (6) is a commitment to preserving site hydrology and reducing the impact of the development on water quality. Such an investment should be rewarded with higher points as an incentive for reaching for such high levels of environmental performance. Moreover, items (5) and (6) are comprehensive for the site, whereas (3) and (4) only address hardscape areas and (1) and (2) only address some landscape features or components that could be incorporated into the landscape design. The environmental benefits of (5) and (6) are likely much higher than those of all the other items in 403.5, and should be rewarded proportionately.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5321	503.4 Stormwater management
Submitter:	Craig Conner, Building Quality	
Requested Action:	Delete without substitution	
Proposed Change:	503.4 ~~(4)~~	
Reason:	503.4 #4 refers to “using technology capable of withstanding the climate conditions of the jurisdiction” is meaningless. For example rock and concrete are generally capable of with standing any climate conditions on the planet. Exactly what are we supposed to use more of?	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5127	503.4 Stormwater management
Submitter:	Robert Hill, Home Innovation Research Labs	
Requested Action:	Revise as follows	
Proposed Change:	**Stormwater management.** Stormwater management includes one or more of the following low-impact development techniques: (3) ~~All or a percentage of impervious surfaces are minimized and~~ permeable materials are used for driveways, parking areas, walkways, and patios.	
Reason:	Using permeable materials reduces the impervious surface. It is not clear if the percentage applies to the “minimization” or the “permeable materials” or both and how to calculate the “minimization”. How should one determine if a driveway length has been shortened enough to be considered “minimized”?	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5068	503.5 Landscape plan
Submitter:	Philip LaRocque, LaRocque Business Management Services, LLC	
Requested Action:	Revise as follows	
Proposed Change:	503.5(2) Turf grass species, other vegetation, and trees that are native or regionally appropriate for local growing conditions are selected and specified on the lot plan. Site observation of installation is waived in winter conditions as long as the lot plan documents these species. 503..5(4) Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan. Site observation of installation is waived in winter conditions as long as the lot plan documents these species.	
Reason:	In cold climates, at least Climate Zones 7,6,5,4,these current practice point verification requirements are very discriminatory in cases where the certification is needed in winter months for buyer contracts or incentives. The current compromise that provides a temporary certification (or equivalent) pending verification of installation is really extra work, costly for all and not necessary if this reasonable amendment is accepted.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5129	503.5 Landscape plan
Submitter:	Robert Hill, Home Innovation Research Labs	
Requested Action:	Revise as follows	
Proposed Change:	**Landscape plan.** A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. (1) Where a lot ~~is less~~ contains more than 50 ~~percent turf~~ natural vegetation, a plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	
Reason:	The intent is for this practice to apply to lots that have significant natural vegetation and that effort is made to restore that vegetation. The current text allows lots with minimal turf and minimal natural vegetation to get points for the practice.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5207	503.5 Landscape plan
Submitter:	Wes Sullens, StopWaste of Alameda County	
Requested Action:	Revise as follows	
Proposed Change:	"~~Turf grass species, other vegetatio~~n, In areas ofthe lot where turf grass is not used, non-invasive vegetation and treesthat are native or regionally appropriate for local conditions are selected."	
Reason:	1) The fourth item under 403.6 rewards points for the use of turf grass in a manner that is consistent with local water availability. Thus, the selection of a turf grass that is "regionally appropriate" in item 3 is redundant with item 4, and could lead to double-rewarding of credit points for the use of turf. Such encouragement of the use of turf grass clearly is inconsistent with the goals of this section. 2) Because turf grasses are regularly mown, they do not provide the height nor flowers that provide food and habitat for pollinators and other wildlife. Therefore, it does not make sense to group them with other types of vegetation. In addition, turf grasses have shallow root depths, and are not as effective at sequestering carbon, retaining water, creating porous soils, or fostering biota, as compared to other plant species with deeper root systems. 3) Turf grass requires a unique maintenance regime that creates a level of pollution risk that is higher than that created by other types of vegetation – yet another reason not to group it with non-turf types of vegetation. 4) The reasons to avoid invasive plants are many: • Invasive plants produce greater amounts of waste. Invasive plants tend to grow faster, spread beyond their original planting areas, and result in greater amounts of green waste than non-invasive species. Additionally, effective eradication of invasive plants often requires the use of herbicides which are classified as hazardous waste and must be disposed of properly at end of life. Avoiding invasive plants is a waste prevention measure for cities and counties who regulate and operate hazardous waste facilities and landfills. • Invasive plants have serious environmental impacts, including increased frequency and intensity of fire regimes in certain climes, altered soil composition, lack of dissolved oxygen in waterways, changes to natural hydrologic cycles, and threaten wildlife. While the effects of invasive plants are most severely felt in the rural areas and wildlands, evidence is that most invasive plants currently causing havoc in the west started as horticultural plantings in urban areas. Therefore, land development in urban and suburban areas have a direct correlation with invasive plant exposure throughout the region. • Management of invasive plants is expensive. In California for example, the cost of control, monitoring, and outreach is conservatively estimated to be $82 million a year (not including indirect costs associated with lost agricultural yields, increased severity of wildfires and floods, loss of productive range and timber lands, reduced land values, damage to infrastructure, and degraded recreational opportunities). • Avoiding invasive plants via building standards is effective and low-cost. Experts agree that prevention is the most effective and resource-efficient way to combat the spread of invasive plants. By requiring construction projects to avoid invasive plant species, demand for invasive plants from nurseries and suppliers will diminish over time. Further, a wide variety of alternatives to invasive plants is easily available with no cost difference, resulting in no cost increase for the design and construction industry.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5243	503.5 Landscape plan
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	(3)(a) 0 percent ~~or EPA WaterSense Water Budget Tool is used to determine the maximum percentage of turf areas~~ Create a new credit independent of (3) that rewards points for the use of the WaterSense Budget Tool, e.g.: (#) The landscape is designed to reflect the water use budget determined through the EPA WaterSense Water Budget Tool. Suggested point value: 5	
Reason:	The WaterSense Budget Tool can be used to design a landscape that reflects local climate conditions. The components of the design that are considered need not be limited to turfgrass. Thus, it makes sense to move the WaterSense Budget Tool into its own credit, independent of choices made on turfgrass.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5259	503.5 Landscape plan

Submitter:	Greg Johnson, Greg Johnson Consulting
Requested Action:	Revise as follows
Proposed Change:	**503.5 Landscape plan.** A landscape plan for the lot isdeveloped to limit water and energy usewhile preserving or enhancing the natural environment. (Where "front" only or "rear" only plan isimplemented, only half of the points (rounding down to a whole number) areawarded for items 1-6)

(1)	~~Where a lot is less than 50% turf, a~~ A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	5
(2)	Turf grass species, other vegetation, and trees are selected and specified on the lot plan that are native or regionally appropriate for local growing conditions.	~~4~~
(3)	Turfgrass is over-seeded with not less than the equivalent rate of one-half pound per acre (.22 kg/.405 ha) of white clover (trifolium repens) or similar flowering maintenance tolerant herbaceous plants.	5
~~(3)~~	~~The percentage of turf areas that is designed to be mowed is limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.~~	-
-	~~(a) 0 percent~~	~~4~~
-	~~(b) greater than 0 percent to less than 20~~	~~3~~
-	~~(c) 20 percent to less than 40 percent~~	~~2~~
-	~~(d) 40 percent to 60 percent~~	~~1~~
	Practices 4 through 6 unchanged	-

Reason:

I propose the elimination of the questionable practice awarding of points for the limitation of areas of turfgrass and to instead award points for the inclusion of white clover to areas of turfgrass. This measure will improve the wildlife habitat value of turfgrass systems installed on ICC-700 compliant sites while maintaining the durability, carbon sequestration, environmental cooling, atmospheric cleansing, control of water and wind erosion, and oxygen production functions of the turfgrass component.

The addition of white clover to turfgrass is not a new idea; it was commonly added to lawns in the first half of the 20th century. Returning to this practice is suggested as an important option for sustainable turfgrass systems where the performance of the turfgrass materials and white clover are complimentary.

This approach is akin to that taken with structural building materials; we do not limit the use of steel in multi-story buildings because it yields in intense fire conditions – we install it as a component of a system with some sort of fireproofing added; we do not limit the use of concrete because of its permeability – we add water and vapor resistive barriers to create an assembly; we do not limit the use of exterior wood – we treat the wood with some other material to resist rotting. By adding flowering plants to the assembly an insect and bird friendly turfgrass system is provided.

The addition of white clover to turfgrass systems is consistent with the “bee lawn” research of the University of Minnesota’s entomology and horticulture departments.[1, 2] This research provides the basis for turfgrass systems that support pollinating arthropods and other fauna.

Research in Illinois by Dr. John Hilty indicates that 53 pollinating insect species, (33 long tongued bees, 14 short tongued bees, 6 wasps,) and 35 non-pollinating insects (9 flies, 14 butterflies, 10 skippers, 2 moths) suck the nectar of white clover.[3] Hilty also reports that many moth caterpillars, 4 species of butterfly caterpillars, and the Flower Thrip all use clover as a food source.[4]

In other white clover faunal associations Hilty states that *“the foliage and seedheads are eaten by the Ruffed Grouse, Greater Prairie Chicken, Wild Turkey, and Ring-Necked Pheasant. Some songbirds occasionally eat the seeds, including the Horned Lark and Smith Longspur (winter only). Various small mammals find the foliage and seedpods very attractive as a source of food, including the Cottontail Rabbit, Groundhog, Thirteen-Lined Ground Squirrel, and Meadow Vole. Large hoofed animals, such as the White-Tailed Deer, cattle, horses, and sheep, also graze on the foliage of clovers.”*[5]

Similarly, the USDA Forest Service identifies white clover as *“an excellent forage plant for livestock and wildlife. The leaves and flowers are grazed by grizzly bear, moose, mule, white-tailed deer, and blue grouse. It comprises nearly 6 percent of the annual forage of the white-footed vole. The seeds are eaten by the northern bobwhite, bufflehead, American coot, sage grouse, ruffed grouse, sharp-tailed grouse, horned lark, mallard, gray partridge, greater prairie chicken, willow ptarmigan, American pintail, California quail, and American robin.”*[5]

	Given white clover's global distribution, (widely naturalized in the temperate regions of the world; native of Europe, North Africa, and western and central Asia;[6] present in all 50 states and provinces of Canada[7]) its habitat value to local wildlife is orders of magnitude beyond that identified by Dr. Hilty in Illinois or to the North American species reported by the USDA Forest Service. Besides wildlife nutrition, white clover is edible by humans with minimal preparation. It is high in protein and used for soup and salads and tea. It also can be made into flour. White clover's potential contribution to urban agriculture furthers its sustainability quotient.[8] White clover is a nitrogen fixing plant, capturing nitrogen from the atmosphere and making it available as fertilizer to other plants when it dies; a sustainability boon in addition to its habitat and urban agriculture values. According to multiple sources it remains green even during drought when turfgrass is dormant; eliminates the need for herbicides because it suppresses weeds; virtually eliminates the need for fertilizer when incorporated with turfgrass because of its nitrogen contribution; requires no pesticides; and smells good. The standard seeding recommendation by the USDA Natural Resources Conservation Service is 2 lbs. per acre (43,560 ft^2) for pastures for 50% coverage.[9] A rate equivalent to 1/2 pound per acre is suggested as appropriate for overseeding lawns. The offered performance alternative to white clover, *"similar flowering maintenance tolerant herbaceous plants"* helps address sites where white clover is not ideally suited. Adding language to the Commentary to provide guidance for the selection of white clover alternatives is strongly indicated. According to the USDA's Natural Resources Conservation Service neither the Federal government nor any state government identifies white clover as a noxious weed or invasive plant although, as is for many beneficial plant species, proper management is recommended for control.10 1. http://blog.lib.umn.edu/efans/ygnews/2012/03/a-bee-lawn-how-to-have-an-inse-1.html 2. http://turf.umn.edu/category/bee-lawn/ 3. www.illinoiswildflowers.info/flower_insects/plants/white_clover.htm 4. http://www.illinoiswildflowers.info/weeds/plants/white_clover.htm 5. http://www.fs.fed.us/database/feis/plants/forb/trirep/all.html 6. http://www.efloras.org/florataxon.aspx?flora_id=110&taxon_id=200012344 7. http://plants.usda.gov/core/profile?symbol=TRRE3 8. http://en.wikipedia.org/wiki/Trifolium_repens 9. http://plants.usda.gov/factsheet/pdf/fs_trre3.pdf 10. http://plants.usda.gov/java/noxComposite **[SEE ATTACHMENTS TO PUBLIC COMMENTS FOR ADDITIONAL INFORMATION]**
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Proposal ID TBD	**LogID 5069**	**503.6 Wildlife habitat**
Submitter:	Philip LaRocque, LaRocque Business Management Services, LLC	
Requested Action:	Revise as follows	
Proposed Change:	503.6 Wildlife habitat. Measures are planned to support wildlife habitat and include at least ~~two~~ one of the following:	
Reason:	The standard should encourage/reward any wildlife habitat efforts and not arbitrarily set the minimum of two specific practices to achieve any points.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5244	503.7 Environmentally sensitive areas
Submitter:	Brett VanAkkeren, USEPA	
Requested Action:	Revise as follows	
Proposed Change:	Move this section to 501.1 Lot and then tier the points as follows: (1) Reward the highest level of points for avoiding environmentally sensitive areas. (2) Allow a somewhat lower number of points when a lot with environmentally sensitive areas is selected and any sensitive areas damaged by construction are fully restored to their pre-construction ecosystem functions and services. (No site can truly be restored to its pre-construction state, even when there is an attempt to do so; thus the lower number of points.) (3) Allow an even fewer number of points when environmentally sensitive areas on the lot that are degraded or disturbed by construction are enhanced or the damage is otherwise mitigated.	
Reason:	These points pertain to an important element in lot selection: avoiding environmentally important areas. Its importance should be highlighted earlier in the chapter as part of the lot selection section. Moreover, restoration and mitigation achieve different results and should not be rewarded the same level of points.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5265	505.0 Intent (Innovative Practices)
Submitter:	Matt Belcher, Verdatek Solutions	
Requested Action:	Add new as follows	
Proposed Change:	**505.6 Resilience** Lot incorporates one or more of the following resilience options, as applicable. 1. The development of portions of the site(s) located within flood hazard areas is avoided as follows: (a) Portions of sites located within flood hazard areas are avoided. (b) Portions of sites located within areas subject to a 0.2% annual chance of (500-year) flood are avoided.	
Reason:	With the focus on future enhancement of the model codes to provide for enhanced "Resiliant" construction, It is an opportunity to include reference in this "above code" standard to incentivise innvotaive practices and process that will demonstrate best practices for eventual application into the model codes.	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		

Proposal ID TBD	LogID 5260	505.1 Driveways and parking areas

Submitter:	Greg Johnson, Greg Johnson Consulting
Requested Action:	Revise as follows
Proposed Change:	**505.1 Driveways and parking areas.** Driveways and parking areas are minimized or mitigated by one or more of the following:
	Practices 1-3 unchanged
	(4) Closed cell grass paving systems are utilized to reduce the footprint of surface driveways and parking areas.
	(a) 25 % to less than 50% **4**
	(b) 50% to 75% **5**
	(c) greater than 75% **6**
Reason:	Closed cell grass paving systems offer multiple environmental benefits; being completely pervious for stormwater management and offering not just passive heat mitigation, but active cooling through transpiration. Grass paving also sequesters carbon and produces oxygen. These multiple benefits deserve recognition as an innovative practice.
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Proposal ID TBD	LogID 5305	505.2 Heat island mitigation

Submitter:	Lorraine Ross, L Ross Consulting Inc
Requested Action:	Revise as follows
Proposed Change:	505.2 Heat island mitigation. Heat island effect is mitigated by ~~one or both of~~ the following: (1) *no change to requirements* ~~(2) Minimum initial SRI of 78 for low-sloped roof (a slope less than or equal to 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope of more than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products are certified and labeled.~~ 602.2 Roof surfaces. A minimum of 90 percent of roof surfaces, not used for roof penetrations and associated equipment, on-site renewable energy systems such as photovoltaics or solar thermal energy collectors, or rooftop decks, amenities and walkways, are constructed of one or ~~both~~ more of the following: *(1) and (2) remain unchanged* (3) Minimum initial SRI of 78 for low-sloped roof (a slope less than or equal to 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope of more than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products are certified and labeled.
Reason:	Reason: Chapter 5 addresses lot design, preparation, and development. Cool roofing does not fit. Cool roofing is more appropriately addressed in Chapter 6. In fact cool roofing requirements can also be found in chapter 6 in the current version (potential double counting). Therefore we have relocated the one compliance option for cool roofing that is found in chapter 5 but not in chapter 6 to section 602.2. The requirement has not been changed only relocated.
TG Recommendation (AS or AM or D):	
Modification of Proposed Change:	
TG Reason:	
TG Vote:	

Proposal ID TBD	LogID 5245	505.3 Density
Submitter:	Jeremy Velasquez, US-EcoLogic	
Requested Action:	Revise as follows	
Proposed Change:	Request for addition of a higher density tier(s): (3) 21 to 34 dwelling units per acre - 11 pts (4)35 or greater dwelling units per acre - 14 pts (5) 70+ dwelling units per Acre - 17 pts	
Reason:	The existing density thresholds seem low for multi-family projects. Higher density projects do have additional environmental benefits. (reduced land usage, etc)	
TG Recommendation (AS or AM or D):		
Modification of Proposed Change:		
TG Reason:		
TG Vote:		