



2012 Update - National Green Building Standard™

Proposed changes to 2008 NGBS

February 2011

Table of Contents

TG-1: ADMINISTRATION, COMPLIANCE, AND OPERATION & OWNER EDUCATION.....	2
CHAPTER 1 – SCOPE AND ADMINISTRATION	2
CHAPTER 2 – DEFINITIONS	2
CHAPTER 3 – COMPLIANCE METHOD	2
CHAPTER 10 – OPERATION, MAINTENANCE, AND BUILDING OWNER EDUCATION.....	3
TG-2: SITE AND LOT DEVELOPMENT.....	6
CHAPTER 2 – DEFINITIONS	6
CHAPTER 3 – COMPLIANCE METHODS	7
CHAPTER 4 – SITE DESIGN AND DEVELOPMENT	8
CHAPTER 5 – LOT DESIGN, PREPARATION, AND DEVELOPMENT	20
TG-3: RESOURCE EFFICIENCY AND INDOOR ENVIRONMENTAL QUALITY.....	33
CHAPTER 2 – DEFINITIONS	33
CHAPTER 6 – RESOURCE EFFICIENCY	34
CHAPTER 9 – INDOOR ENVIRONMENTAL QUALITY	74
TG-4: WATER EFFICIENCY	90
CHAPTER 3 – COMPLIANCE METHOD	90
CHAPTER 8 – WATER EFFICIENCY	90
TG-5: ENERGY EFFICIENCY	99
CHAPTER 2 – DEFINITIONS	99
CHAPTER 3 – COMPLIANCE METHOD	99
CHAPTER 7 – ENERGY EFFICIENCY	99
CHAPTER 11 – REFERENCED DOCUMENTS	117
TG-6: MULTIFAMILY	118
CHAPTER 2 – DEFINITIONS	118
CHAPTER 3 – COMPLIANCE METHOD	118
TG-7: RENOVATIONS AND ADDITIONS	119
CHAPTER 2 – DEFINITIONS	119
CHAPTER 3 – COMPLIANCE METHOD	119
ENTIRE DOCUMENT	120
CHAPTER 7 – ENERGY EFFICIENCY	127
CHAPTER 8 – WATER EFFICIENCY	129
CHAPTER 9 – INDOOR AIR QUALITY	129
CHAPTER 10 – OPERATION, MAINTENANCE, AND BUILDING OWNER EDUCATION.....	130

TG-2: Site and Lot Development

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
317	Erin Ashley National Ready Mixed Concrete Association NRMCA	202 Definitions Revise as follows	HARDSCAPE. Stone, masonry, concrete, asphalt, wood <u>Asphalt, concrete, masonry, stone, wood</u> and other non-plant elements external to the building shell on a landscape.	Examples of hardscape (i.e., concrete, stone, etc.) should be written in alphabetical order as to not imply preference for first material in list.		
205	Gary Ehrlich NAHB NAHB	202 Definitions Add new as follows	FLOOD HAZARD AREA. The greater of the following two areas: 1. <u>The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.</u> 2. <u>The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.</u>	Add a definition for "flood hazard area" to be used in connection with proposals for Chapter 4 and Chapter 5 on avoidance of flood hazard areas.		
210	glynn rountree NAHB NAHB	202 Definitions Add new as follows	LOW-IMPACT DEVELOPMENT (LID). <u>A storm water management approach that attempts to recreate the predevelopment of a site by using a lot level topography and landscape to deter storm water runoff and promote soil infiltration and recharge. Sometimes referred to as "green infrastructure" or by other names, LID includes the use of "green roofs," "rain gardens," tree boxes, and infiltration devices or other means to contain or slow storm water runoff from impervious surfaces and allow it to seep into the ground.</u>	LID nomenclature is confusing and used in different ways by different people. LID is expected to become much more prevalent in the U.S. because of new mandates or encouragement by the states and EPA as a way to improve water quality and other storm water issues. Providing a few examples of LID may help nonprofessionals to better understand what the term covers.		
394	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Environmentally Sensitive Area. Areas within wetlands as defined by federal, state, or local regulations; areas of steep slopes; "Prime Farmland" as defined by the U.S. Department of Agriculture; areas of "critical habitat" for any federal or state threatened or endangered species, <u>areas defined by state or local jurisdiction as environmentally sensitive.</u>	The current definition would not recognize the Chesapeake Bay Critical area.		
395	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Hardscape. Stone, masonry, concrete, asphalt, wood <u>(including elevated decks)</u> and other non-plant elements external to the building shell on a landscape.	It was unclear if decks were intended to be included or not. The language should clarify this one way or the other.		
397	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Infill Site. Vacant or underutilized land that includes <u>is serviced by two or more of the following: road, electrical power, sewer, or water and is bounded on at least 75% of the perimeter by previously developed areas.</u>	The original definition was too encompassing; a rural field bounded on one side with a road and an electric power line would qualify. An additional definition of an infill lot should also be added.		
398	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Infill lot. <u>A vacant or underutilized lot that is serviced by two or more of the following: road, electrical power, sewer, or water and is bounded on at least 75% of the perimeter by previously developed areas or a lot that is part of an infill site provided the infill site is less than 25 acres.</u>	The original definitions did not provide clear guidance on how to consider multiple lots within an infill site. These changes are intended to make the definition more specific and to allow credit for lots within an infill site. The task group should make the final determination on how large of an infill site can be subdivided into lots and the lots still earn the infill lot points.		
408	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Site. Any area of land that is or will be developed into two or more parcels (<u>lots</u>) of land intended for multiple ownership, uses, or structures and designed to be part of an integrated whole such as a residential subdivision, mixed-use development, or master planned community. Site, as defined, generally contains multiple lots. (also see Lot)	Bob to complete.		
63	Steve Hale Build Green NM Build Green NM	202 Definitions Add new as follows	Infill Site. Vacant or underutilized land that includes two or more of the following: Road, electrical power, sewer or water. <u>Also an infill site shall be surrounded on at least two of four sides with existing development that is 5 years or older.</u>	Virtually any site could be considered "infill" by the existing definition.		
244	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	CONSTRUCTED WETLAND - A constructed wetland is an artificial <u>wetland, marsh or swamp created as a new or restored habitat for native and migratory wildlife, for anthropogenic discharge such as wastewater, stormwater runoff, or sewage treatment, for land reclamation after mining, refineries, or other ecological disturbances such as required</u>	Constructed Wetland is not a commonly understood term except among industry experts.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<u>mitigation for natural wetlands lost to a development.</u>			
245	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>INFILL LOT - is located in an area served by existing infrastructure and must include centralized water and sewer connections and the site boundaries should be 50% adjacent to development or active public parkland, is selected.</u>	A better more specific definition of infill is needed. The existing definition for infill was too broad and could be applicable to sites not really considered "infill" by industry experts.		
246	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LANDSCAPE PRACTICE, LANDSCAPING - refers to any activity that modifies the visible features of an area of land and may include living elements, such as flora or fauna; natural elements such as terrain shape and elevation, or bodies of water; human elements such as structures, buildings, fences or other material objects created and/or installed by humans; and abstract elements such as the weather and lighting conditions.</u>	There is at present no definition for Landscape, Landscaping or Landscape Practice in the NGBS. A large percentage of points in both Chapters 4 and 5 are derived from Landscape planning, design and techniques. Therefore a definition is warranted.		
248	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LOT. A single parcel of land generally containing one primary structure or use. Lot development, as defined, may include multiple ownership (such as with a condominium building) or multiple uses (such as with a mixed-use building). A lot is predominately represented by a single-family dwelling unit, a multi-family structure, or a retail, commercial or industrial mixed-use building also containing offices and shops. Lots maybe located in urban, suburban and rural/exurban locations. . A lot can be located within a site. (also see SITE)</u>	Greater specificity of what activities can occur on a lot and where geographically a lot can exist was needed, as these deviations can greatly affect the ability of a developer or builder to accrue points.		
249	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LOW-IMPACT DEVELOPMENT (LID). A storm water management approach that attempts to recreate the predevelopment of a site by using a lot level topography and landscape to deter storm water runoff and promote soil infiltration and recharge. Sometimes referred to as "green infrastructure" or by other names, LID includes the use of "green roofs," "rain gardens," tree boxes, and infiltration devices or other means to contain or slow storm water runoff from impervious surfaces and allow it to seep into the ground.</u>	LID nomenclature is confusing and used in different ways by different people. LID is expected to become much more prevalent in the U.S. because of new mandates or encouragement by the states and EPA as a way to improve water quality and other storm water issues. Providing a few examples of LID may help nonprofessionals to better understand what the term covers.		
251	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>RURAL/EXURBAN - Rural or Exurban locations would be areas where residential density is less than 2 dwelling units per acre and/or more than 10 miles from an MSA defined central city.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
252	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>SOFTSCAPE - Softscape refers to the elements of a landscape that comprise live, horticultural elements. Softscaping can include, flowers, plants, shrubs, trees, flower beds, etc. The term softscape stands in contrast to hardscape which represents inanimate objects of a landscape such as pavers, stones, rocks, etc.</u>	Softscape stands in contrast to the term "hardscape," which represents inanimate objects of a landscape such as pavers, stones, rocks, etc. The term softscape should be added, as the term "hardscape" is currently defined in the standard.		
253	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>SUBURBAN – Suburban locations are located outside of central cities, generally developed after 1945, consist of large tracts of single-use developments and generally have a residential density of less than 7 dwelling units per acre.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
254	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>URBAN – Urban locations are located within central cities, generally developed prior to 1945, have a mix of land uses within ¼ mile distance, and generally have a residential density greater than 6-7 dwelling units per acre.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
255	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>WASTEWATER - is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations.</u>	Wastewater is mentioned throughout the standard, not just in reference to vertical development highlighted in Chapters 4 and 5, but also vertical construction addressed in Chapters 6 -10. Therefore, a definition is warranted to provide clarification to the verification process.		
256	Steven Orłowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>WILDLIFE HABITAT/CORRIDOR - is an ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism. It is the natural environment in which an organism lives, or the physical environment that surrounds (influences and is utilized by) a species population.</u>	In Chapters 4 and 5, points are awarded for developers who preserve wildlife habitats on site, as well as provide on-site amenities to encourage urban wildlife. Therefore, it is pertinent to provide a definition to this term to help clarify the verification process.		

Chapter 3 – Compliance Methods

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
561	Robert Hill NAHB Research Center NAHB Research Center	302.1 Site design and development Revise as follows	Site Design and Development. The threshold points required for the environmental performance levels to qualify a new or existing subdivison as green under this standard	When the Standard was originally created it made sense to allow retroactive certifications but going forward it makes more sense to only allow certification of new developments		

Chapter 4 – Site Design and Development

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
427	Robert Hill NAHB Research Center NAHB Research Center	400.0 Intent (Site Design and Development) Revise as follows	400.0 Intent. This section applies to land development for the eventual construction of buildings or additions thereto that contain dwelling units. The rating earned under Section 303 based on practices herein, applies only to the site as defined in Chapter 2. The buildings on the site earn their own performance level by complying with the provisions of Section 303, 304, or 305.5, as applicable. <u>However, practices marked with "Ch5.xx.xx appropriate" automatically convey points for those practices in certified developments to the lot provided the builder does not do anything to preclude the intent of the practice.</u>	There is significant confusion regarding which practices/points can convey from the development to the lot. It seems reasonable that the lot should get credit for the green practices done by the builder. This makes the lot more attractive to builders and thus more developers will follow the standard. But the appropriateness of the practices/points needs to be clearly defined by the task group and committee.		
257	Steven Orlowski National Association of Home Builders NAHB	401.1 Infill Site Delete and substitute as follows	401.1 Infill site. An infill site, is selected which is located in an area served by existing infrastructure and must include centralized water and sewer connections and the site boundaries should be 50% adjacent to development or active public parkland, is selected.	An expanded definition of infill is needed so that the criteria is applicable to a true infill site. The existing definition for infill was too broad and could be applicable to sites not really considered "infill" by industry experts.		
258	Steven Orlowski National Association of Home Builders NAHB	401.2 Greyfield Site Delete and substitute as follows	401.2 Greyfield site. A greyfield site, and or a EPA recognized brownfield site, is selected. 401.3 Brownfield site. A brownfield site, is selected.	Greyfield sites and Brownfield sites are distinctly different entities and should be separated out as such in the criteria.		
111	Anthony Floyd City of Scottsdale City of Scottsdale	403.1 Natural Resources Revise as follows	Make line items (1) and (2) mandatory.	Local building departments already require sites plans to identify existing natural and manmade features. A natural resources inventory merely identifies the site's environmental attributes. This is simple and straight forward. As part of this inventory, priority site attributes and resources can be identified and made part of the site development plan. This is a prerequisite for beginning any green building project and should be mandatory for the National Green Building Standard.		
436	Robert Hill NAHB Research Center NAHB Research Center	403.10 Existing and Recycled Materials Add new as follows	(Points awarded for every 10 percent of total building materials that are reused, deconstructed and/or salvaged. <u>The percentage is calculated on either a volume or cost basis.</u>	Guidance is needed on how to calculate the percentage. The task group should determine a preference for volume or cost basis.		
437	Robert Hill NAHB Research Center NAHB Research Center	403.11 Environmentally Sensitive Areas Revise as follows	(1) Development does not impact an environmentally sensitive areas are avoided.	The original text is unclear if the entire site must be void of any sensitive areas or if the site can include sensitive area but the development activity must not impact these areas.		
438	Robert Hill NAHB Research Center NAHB Research Center	403.11 Environmentally Sensitive Areas Revise as follows	(2) Compromised environmentally sensitive areas are mitigated or restored <u>beyond any government mandated mitigation.</u>	Some guidance should be provided as to how much restoration/mitigation is needed to meet the intent of this practice. Perhaps stating a percentage of the environmentally sensitive area on the site.		
153	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.11 Environmentally Sensitive Areas Revise as follows	This section should be a mandatory requirement, not one that provides credits. (This proposed change is also being submitted for Section 503.8)	Locational considerations are fundamental to the definition of a green building. Moreover, the importance of environmentally sensitive areas to human health and the environment makes their protection essential in any standard that aims to promote increased environmental protection.		
156	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.11 Environmentally Sensitive Areas Revise as follows	(1) Environmentally sensitive areas are avoided. (2) Compromised environmentally sensitive areas are mitigated or restored. (3) <u>Buildings are not erected, and landscape improvements are not conducted, on land that is undeveloped or that has been developed only for agricultural purposes, and that is within a 100-year floodplain.</u>	Locational considerations are fundamental to the definition of a green building. NAHB is notably weaker than other green building rating and certification systems on the issue of site sustainability, and in particular, in discouraging building on environmentally sensitive and valuable lands. NAHB has only one optional credit restricting building in sensitive areas, which nonetheless allows building if the area is to be mitigated or restored. With no specific requirements or definition for mitigation or restoration, nor with a means of enforcement for this provision, this practice is insufficient to guarantee protection of sensitive lands. This shortcoming is a major weakness in the standard. Sections 503.8 and 403.11 should be revised to correct this shortcoming.		
164	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.12 Density Add new as follows	(4) <u>The lot [or site] is within one-quarter mile of developed residential land with an average density of at least 8 units per acre.</u> (5) <u>The lot [or site] is adjacent to existing development with pre-project connectivity of at</u>	The standard provides points for densely-built projects in sections 503.9 and 403.12, as well as in several innovative practices for subdivisions in 405. EPA supports these practices, but recommends that NAHB go further by incentivizing buildings or subdivisions to be built adjacent to densely-built areas as well.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action		
			<p><u>least 90 intersections/mile of any continuous segment equaling 25 percent of the project boundary. Areas excluded from the calculation shall be water bodies, parks larger than 1/2 acre, recreational facilities, public campuses (such as universities), airports, rail yards, areas preserved from development by codified law or prerequisites of the rating system, and land that cannot be developed due to a unique topographic or geologic condition (such as steep slopes). Street rights-of-way may not be excluded.</u></p>					
439	Robert Hill NAHB Research Center NAHB Research Center	403.13 Mixed-use Development Revise as follows	Mixed-use development is incorporated.	Can adjacent mixed use also qualify here?				
271	Steven Orłowski National Association of Home Builders NAHB	403.13 Mixed-use Development Delete and substitute as follows	<p>403.13 405.8 Mixed-Use Development Mixed-use development is incorporated. <u>Sites 20 acres or less in size with boundaries adjacent to a minimum of two uses containing retail, services and employment may achieve the mixed-use points, given that a pedestrian network of sidewalks, pathways or plazas exist that connect a majority of lots within the site with the adjacent non-residential uses.</u></p>	Single uses, such as single-family residential, if designed properly can use adjacent, existing nonresidential uses to help build an overall mixed-use environment. Developers who design with this objective, within the proposed parameters, should be awarded points under this category.				
428	Robert Hill NAHB Research Center NAHB Research Center	403.2 Building Orientation Revise as follows	<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south <u>and appropriate covenants are included requiring builders to construct buildings which take advantage of that orientation.</u></p>	The benefit of site orientation will only be realized if builders are required to take advantage of it.				
272	Steven Orłowski National Association of Home Builders NAHB	403.2 Building Orientation Delete and substitute as follows	<table border="1" data-bbox="578 832 1448 909"> <tr> <td data-bbox="578 832 1299 909"> <p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p> </td> <td data-bbox="1299 832 1448 909" style="text-align: center; vertical-align: middle;">6</td> </tr> </table> <p>405.9 Site Design for Climate Conditions and Energy Efficiency.</p> <p><u>(1) Solar Orientation – A minimum of 75 percent of the building lots within the site are designed with the longer dimension of structure to face within 20 degrees of south.</u></p> <p><u>(2) Tree Plantings –</u></p> <p>a. <u>Plant Deciduous Trees to the east and west of a lot(s) to create shade.</u></p> <p>b. <u>Plant evergreens to the north and west to block winter winds.</u></p> <p>c. <u>Avoid plantings to the south.</u></p> <p><u>(3) Heat Island Mitigation – The following is provided through site design in all common areas in the community site plan:</u></p> <p style="padding-left: 40px;"><u>(a) Shading of hardscaping: Shade is provided from existing or new vegetation (within five) years or from trellises or similar structures. Shade of hardscaping to be measured at summer solstice at noon.</u></p> <p style="padding-left: 40px;"><u>(b) Light colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater.</u></p> <p style="padding-left: 40px;"><u>(c) The use of open grid paving systems and open-graded aggregate systems that reduce hardscape.</u></p> <p style="padding-left: 40px;"><u>(d) Common area buildings, such a club houses and maintenance facilities, utilize light colored roofing, high reflectivity, or green roof technologies.</u></p> <p><u>(4) Lighting – Energy efficient lighting is used in the common open space areas and in</u></p>	<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p>	6	Consolidating all the criteria that relates to climate and energy into one section. Additionally, have added several criteria related to climate and energy efficiency that can be carried out on the lot or site by a builder or developer, and can also be done relatively easily and will have a credible green effect.		
<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p>	6							

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action												
			<p>private and public rights-of-way.</p> <p><u>(5) Alternative Energy Sources – Dedicating a common area within a community site plan for the installation of an alternative energy facility that would generate electricity for the community. An alternative energy facility may generate electricity using solar, wind or hydro technologies.</u></p>															
429	Robert Hill NAHB Research Center NAHB Research Center	403.3 Slope Disturbance Revise as follows	<p>Slope disturbance. [BH1] Slope disturbance is minimized by one or more of the following:</p> <p style="text-align: center;">(Points awarded only if there are developable steep slopes in the project area.)</p> <p>(1) The site has a slope of greater than 25% and all or a percentage of development on steep slopes is avoided.</p> <table border="1" data-bbox="606 655 1460 756"> <tr> <td>(a)</td> <td>less than 25 percent</td> </tr> <tr> <td>(b)</td> <td>25 percent to 75 percent</td> </tr> <tr> <td>(c)</td> <td>greater than 75 percent</td> </tr> </table> <p>(2) The site has a slope of greater than 25% and Hydrological/soil stability study for steep slopes is completed and used to guide the design of all buildings on the site.</p> <p>(3) The site has a slope of greater than 25% and All or a percentage of roads are aligned with natural topography to reduce cut and fill.</p> <table border="1" data-bbox="606 997 1460 1098"> <tr> <td>(a)</td> <td>less than 25 percent</td> </tr> <tr> <td>(b)</td> <td>25 percent to 75 percent</td> </tr> <tr> <td>(c)</td> <td>greater than 75 percent</td> </tr> </table> <p>(4) The site has a slope of greater than 25% and Long-term erosion effects are reduced by the use of terracing, retaining walls, landscaping, and restabilization techniques.</p> <p>(5) The site has not slopes greater than 25% 10 points</p>	(a)	less than 25 percent	(b)	25 percent to 75 percent	(c)	greater than 75 percent	(a)	less than 25 percent	(b)	25 percent to 75 percent	(c)	greater than 75 percent	<p>We receive a number of questions regarding why a developer should be able to get up to 19 points just because the site has steep slopes when another developer may choose a flat site in order to avoid the adverse impact of slopes. Recognizing some credit for choosing a flat site would reduce this concern. The task group/committee should decide on the point value as well as any qualifications as to how much of the site must have a steep slope to earn points for this practice. It may also be worth considering merging this practice with 403.11</p>		
(a)	less than 25 percent																	
(b)	25 percent to 75 percent																	
(c)	greater than 75 percent																	
(a)	less than 25 percent																	
(b)	25 percent to 75 percent																	
(c)	greater than 75 percent																	
128	Anthony Floyd City of Scottsdale City of Scottsdale	403.4 Soil Disturbance and Erosion Revise as follows	<p>Make line items (1) and (3) mandatory.</p>	<p>Soil exposed by construction activities is especially vulnerable to erosion. Soil erosion contributes to stormwater run-off pollutants and air borne particulates that make up air pollution. Most city and county authorities require a Stormwater Pollution Prevention Plan to minimize stormwater pollutant runoff. Based on the site inventory and an established site plan, it is simple to identify the limits of clearing and grading. Most jurisdictions already require a grading and drainage plan as part of civil engineering and building permit requirements. This process has long been established in the engineering and regulatory process around the country. This should be a prerequisite and therefore mandatory for the National Green Building Standard.</p>														
216	Steven Orlowski National Association of Home Builders NAHB	403.4 Soil Disturbance and Erosion Add new as follows	<table border="1" data-bbox="574 1582 1460 1874"> <tr> <td colspan="2">403.4 Soil disturbance and erosion. Soil disturbance and erosion are minimized by one or more of the following: (also see Section 404)</td> </tr> <tr> <td>(1)</td> <td>Construction activities are scheduled to minimize length of time that soils are exposed. 4</td> </tr> <tr> <td>(2)</td> <td>Utilities are installed by alternate means such as directional boring in lieu of open-cut trenching. Shared easements or common utility trenches are utilized to minimize earth disturbance. Low ground pressure equipment or temporary 4</td> </tr> </table>	403.4 Soil disturbance and erosion. Soil disturbance and erosion are minimized by one or more of the following: (also see Section 404)		(1)	Construction activities are scheduled to minimize length of time that soils are exposed. 4	(2)	Utilities are installed by alternate means such as directional boring in lieu of open-cut trenching. Shared easements or common utility trenches are utilized to minimize earth disturbance. Low ground pressure equipment or temporary 4	<p>Proposed language will greater flexibility and options for soil erosion and sediment. It is important that all contractors and subcontractors are aware of alternatives to protect against wind or water erosion.</p>								
403.4 Soil disturbance and erosion. Soil disturbance and erosion are minimized by one or more of the following: (also see Section 404)																		
(1)	Construction activities are scheduled to minimize length of time that soils are exposed. 4																	
(2)	Utilities are installed by alternate means such as directional boring in lieu of open-cut trenching. Shared easements or common utility trenches are utilized to minimize earth disturbance. Low ground pressure equipment or temporary 4																	

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			matting is used to minimize excessive soil consolidation. (3) Limits of clearing and grading are demarcated in the plan. 4 (4) <u>Limit the soil disturbance to 10 percent of the total acreage of the project or 10 acres, whichever is greater</u> (5) <u>Soil disturbances are properly stabilized within fourteen (14) days (7 days on steep slopes) after construction activity is completed for any portion of the project</u>			
131	Anthony Floyd City of Scottsdale City of Scottsdale	403.5 Storm Water Management Revise as follows	Make line item (2) mandatory.	Building permit authorities already require site surveys along with a proposed site plan and grading/drainage plan. Most city, town and county authorities have master stormwater surveys and plans to ensure public infrastructure and development will not adversely affect regional drainage paths. This process has long been established in the engineering and regulatory process around the country. A site stormwater management plan should be a prerequisite and therefore mandatory for the National Green Building Standard.		
430	Robert Hill NAHB Research Center NAHB Research Center	403.5 Storm Water Management Add new as follows	(3) <u>A storm water management plan is developed to manage storm water during construction on the development.</u> ??points	The current text is not clear regarding managing storm water during or after construction is complete. It seem reasonable to award points for proper management during construction.		
563	Robert Hill NAHB Research Center NAHB Research Center	403.5 Storm Water Management Revise as follows	(3) Permeable materials are selected/specified for <u>common area</u> roads, driveways, parking areas, walkways and patios.	The current text is not clear if this is too apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
218	Steven Orłowski National Association of Home Builders NAHB	403.5 Storm Water Management Add new as follows	403.5 Storm water management. Storm water is managed using one or more of the following low-impact development techniques: (1) Natural water and drainage features are preserved and used. 6 (2) A storm water management plan is developed to minimize concentrated flows and simulate flows found in natural hydrology by the use of vegetative swales, French drains, wetlands, drywells, rain gardens, and similar features. 6 (3) Permeable materials are selected/specified for roads, driveways, parking areas, walkways, and patios. (a) less than 25 percent 1 (b) 25 percent to 75 percent 3 (c) greater than 75 percent 5 (4) <u>Storm water management features/structures should be designed for the reduction of nitrogen and phosphorus</u> (a) <u>less than 15 percent reduction</u>	Urban stream syndrome is a result of storm water management that focuses primarily on reducing storm water flows and velocity, adding an optional requirement for nutrient reduction furthers the commitment of the builder to reduce pollution through proper best management practice selection.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p style="text-align: center;">1</p> <p>(b) 15 percent to 50 percent reduction</p> <p style="text-align: center;">3</p> <p>(c) greater than 50 percent reduction</p> <p style="text-align: right;">5</p>			
166	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.5 Storm Water Management Add new as follows	<p><u>Option 1: Stormwater management practices that manage rainfall on-site and prevent the off-site discharge from all storms up to and including the volume of the 95th percentile storm event. Maintain predevelopment (natural) runoff temperatures.</u></p> <p><u>Option 2: Conduct a hydrologic analysis that results in the design of a stormwater management system that maintains the pre-development (stable, natural) runoff hydrology of the site throughout the development or redevelopment process. Post construction runoff rate, volume, duration, and temperature shall not exceed predevelopment rates.</u></p>	The standard's practice on stormwater management is commendable for encouraging the use of low-impact development techniques. However, the practice does not go far enough to ensure that buildings do not have an overly harmful impact on the hydrology of the surrounding area. This section can be strengthened through the development of several additional practices. In place of or in addition to the existing, relatively prescriptive measures in 503.4 and 403.5, EPA recommends a stormwater management practice focusing more on outcomes.		
169	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.5 Storm Water Management Add new as follows	<u>Stormwater management verification. Stormwater rate, volume and duration calculations shall be provided for pre- (stable, natural) and post- development for the 2, 10, 25, 50 and 100 year storm events in addition to other applicable state and local reporting requirements. Infiltration and evapotranspiration strategies and rainwater collection (where allowed) calculations shall be indicated. A long-term maintenance plan for stormwater management practices shall be provided.</u>	In support of the requirements that EPA suggested in a prior comment (ID# 166), we we recommend the above means of verification.		
297	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	403.6 Landscape Plan Revise as follows	403.6 #4	This section assumes that no turf means lower water use. Probably true in many cases, but we can probably find a case where really low water turf, (eg buffalo grass) in some large percentage of area would use less water than some smaller or equal percentage of other plantings. Consider creating a list of low-water plants that are treated like almost like no-water, or at least low water.		
432	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	Landscape Plan. A landscape plan is developed to limit water and energy use <u>in common areas</u> while preserving or enhancing the natural environment. Examples of techniques include, but are not limited to, one or more of the following:	The current text is not clear if this is to apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
433	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	(9) An integrated <u>common area</u> pest management plan to minimize chemical use in pesticides and fertilizers is developed.	The current text is not clear if this is to apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
565	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	A landscape plan is developed to limit water and energy use while preserving or enhancing the natural environment <u>utilizing one or more of the following. Examples may include but are not limited to, one or more of the following:</u>	The original text suggests that an number of other options may be considered but this leaves open the question of how many points to award and does that mean other options are no longer available. Deleting other options makes nationwide application of the standard more consistent. It is also suggested that the task group consider adding clarification as to the extent of the practice that must be implemented to meet the practice. For example, (3) "Turf grass species, other vegetation, and trees ...". How many tress, how much other, does all the turf need to be native, and are these points appropriate for small townhouse lots that may not have any landscape are but a small flower bed in front.		
262	Steven Orłowski National Association of Home Builders NAHB	403.6 Landscape Plan Add new as follows	<p>403.6 Landscape Plan</p> <p><u>(12) Trees that might otherwise be lost due to construction are transplanted to other areas on site or off site, using (ANSI certified?) tree-transplanting techniques to ensure a high rate of survival.</u></p> <p><u>(13) Greywater irrigation systems are used to water common areas. Greywater to be used for greywater irrigation shall conform to all criteria within Section 802.1.</u></p> <p><u>(14) Cisterns, rain barrels and similar tanks are structures designed to intercept and store</u></p>	These are additional practices that are common among industry experts and recognized as being "green." This will afford builders and developers to achieve additional points by practicing some relatively easy yet very effective green practices.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>runoff from rooftops. These systems may be above or below ground, and they may drain by gravity or be pumped. Stored water may be slowly released to a pervious area, and used for irrigation of lawn, trees and gardens located in common areas. X percent of site area must be irrigated by these means and demonstrated on the site plan.</p>			
172	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.6 Landscape Plan Delete and substitute as follows	<p>(3) The percentage of all turf areas are limited as part of the landscaping:</p> <p>(a) 0 percent</p> <p>(b) greater than 0 percent to less than 25 20 percent</p> <p>(c) 25 20 percent to less than 40 50 percent</p> <p>(d) 50 40 percent to 75 60 percent</p>	EPA supports the inclusion of a practice restricting turf areas in landscaping, but the minimum target of 75 percent of all landscaping is too low. We recommend that the minimum instead be set at 60 percent, with one additional point awarded for every further 20 percent reduction.		
174	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.6 Landscape Plan Revise as follows	<p>(9) An integrated pest management plan to minimize chemical use in pesticides and fertilizers is developed. An Integrated Pest Management plan is developed, implemented, and maintained that addresses both indoor and outdoor pest control. The plan must include the EPA's Pesticide Environmental Stewardship Program four tiered approach to pest management:</p> <p>1) Set action thresholds. Before taking any pest control action, IPM first sets an action threshold, the point at which pest populations or environmental conditions indicate that pest control action must be taken to avert a nuisance, health hazard, or economic threat.</p> <p>2) Monitor and Identify Pests. IPM programs monitor and identify pests and the most appropriate course of action for a particular pest chosen. Monitoring and pest identification ensures that appropriate actions are taken. This could include some combination of prevention and control.</p> <p>3) Prevention. The first line of defense in any IPM program is the prevention of conditions in or around a building or in an orchard that attract pests – sources of food, water, and shelter. IPM service providers use practices to prevent pests including, but not limited to:</p> <p>a. Customer education including materials for non-English speakers and those with difficulty reading.</p> <p>b. Providing customers with information about pest behavior and conditions, and that allow pests access to the site, food, water, and habitat, so that the customer can understand and participate in the pest management process;</p> <p>c. Irrigation practices, the treatment or removal of plants attractive to pests, and physical changes to reduce pest access to structures;</p> <p>d. Removal of pest habitat, sources of food and water, and breeding areas - keeping premises free of trash and overgrown vegetation, and diverting water away from a building or landscaping to avoid standing water;</p> <p>e. Prevention of access to structures - sealing areas where pests enter the buildings (weatherization).</p>	The IPM component of the standard's landscape plan (503.5.8; 403.6.9) can be improved in two main ways. First, NAHB should use more specific language to ensure that the IPM plan has a meaningful environmental impact. Secondly, the practice should require the use of pest control operators who are certified in IPM practices. We suggest the above language instead of the standard's current language on IPM.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>4) Management. Integration of Multiple Management Strategies and Tools</p> <p>A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest. If identification, monitoring, and action thresholds indicate that pest management is required, and preventive methods are no longer effective or viable, management methods can be and should be employed. Management strategies may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers; b. Biological controls including the use of predators, parasitoids, or pathogens to control the pest; and, c. If preventive measures along with the practices in paragraphs 'a' and 'b' directly above are insufficient to prevent or control pests, chemical controls may be used. <p>Note: Under an IPM program, management methods are evaluated based on effectiveness and relative risk. Those methods that are found to both be the most effective and pose the lowest risk are selected first. IPM combines two central methods for reduced-risk pest control:</p> <ul style="list-style-type: none"> a. Least Toxic Pest Management Options. These include use of physical controls, such as trapping, vacuuming, and steam cleaning. b. Pesticides <p>Pest management is a group activity from the prevention and monitoring phase through the chemical usage decision. All stakeholders should be involved in the decision to use chemicals. For structural situations, this includes the IPM coordinator, pest management professionals, building managers, cleaning staff, etc. In agricultural situations, this includes the crop consultant/scout, grower, and, when appropriate, food processor.</p> <p>Pest management plans should dictate action thresholds and a decision-making process for actions including pesticide selection. Universal notification (advance notice of not less than 72 hours under normal conditions and 24 hours in emergencies before a pesticide, other than a least-toxic pesticide, is applied in a building or on surrounding grounds that the building management maintains). Define emergency conditions. There are best management practices to follow if pesticides are to be used:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read the label first, <input type="checkbox"/> choose the right chemical for a particular pest, and <input type="checkbox"/> have a clear understanding of the proper application rate and method – misuse can harm not only your health but also the environment. <p>When a chemical control method is required within an IPM program, a biological pesticide should be considered first. Biopesticides are usually inherently less toxic than conventional pesticides and decompose quickly so they do not leave persistent chemical residues in the environment.</p> <p>Sometimes a conventional pesticide (synthetic materials that directly kill or inactivate a pest) may be needed for satisfactory pest control. Ideally, all pesticides are used in combination with other lower-risk non-chemical pest management practices. Even within conventional</p>			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action								
			<p>pesticides, there is a progression of best management practices:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use baits and spot treatments are limit unnecessary exposure to chemicals, <input type="checkbox"/> Apply pesticides only as directed by the label, <input type="checkbox"/> Notify customers prior to pesticide applications - ideally, a 24 hour notice before for applications in or around any building landscape or structure. <input type="checkbox"/> In occupied structures, pest management professionals and/or IPM coordinators must clearly explain to the building occupants how to maintain safe interaction around the treated areas. <p>Hire pest management professionals certified by an EPA Pesticide Environmental Stewardship Program partner organization, such as the National Pest Management Association's Green Pro, IPM Institute's Green Shield, or other programs, as appropriate.</p>											
235	Thomas Stroud HPBA HPBA	403.6 Landscape Plan Add new as follows	403.6(8) On-site tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction or as a base for walking trails, and cleared trees are recycled as sawn lumber, pulp wood or biomass for Solid Fuel Burning Appliance as per Section 901.2.1(2) for on-site renewable energy.	This is in support of the use of on-site renewable energy.										
434	Robert Hill NAHB Research Center NAHB Research Center	403.7 Wildlife Habitat Revise as follows	Measures are planned that will support wildlife habitat.	This could use some definition as what needs to be done (including to what extent) to meet the intent of this practice. Clarification is needed to distinguish what measures are needed for points in an urban setting compared to a rural setting.										
435	Robert Hill NAHB Research Center NAHB Research Center	403.9 Existing Buildings Revise as follows	Existing building(s) and structure(s) is/are preserved, reused, modified, or disassembled for reuse or recycling of building materials.	Some guidance is needed to clarify the extent of preservation, reuse, etc. needed to qualify for this practice.										
183	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.9 Existing Buildings Add new as follows	<ul style="list-style-type: none"> <input type="checkbox"/> <u>Remove and replace lead piping in water systems intended to be preserved.</u> <input type="checkbox"/> <u>Replace existing drinking water plumbing materials that do not meet or exceed current health-based materials specifications, such as (but not only) NSF/ANSI 61.</u> <input type="checkbox"/> <u>Install plumbing materials compatible with the drinking water inflow to the structure without supplemental treatment under intended usage conditions, and which do not cause unhealthy water to be drawn by consumers.</u> <input type="checkbox"/> <u>Operate the internal DW system to minimize adverse water quality concerns (metals, microbial).</u> 	These additional considerations when re-using existing building (to be occupied and used by humans or domesticated animals) should be added in order to protect drinking water quality and reduce the resources required for water treatment.										
219	Steven Orlowski National Association of Home Builders NAHB	404.3 Soil Disturbance and Erosion Add new as follows	<table border="1"> <tr> <td>404.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following:</td> <td></td> </tr> <tr> <td>(1) Limits of clearing and grading are staked out prior to construction.</td> <td style="text-align: center;">5</td> </tr> <tr> <td>(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.</td> <td style="text-align: center;">4</td> </tr> <tr> <td>(3) Sediment and erosion controls are installed and maintained.</td> <td style="text-align: center;">5</td> </tr> </table>	404.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following:		(1) Limits of clearing and grading are staked out prior to construction.	5	(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.	4	(3) Sediment and erosion controls are installed and maintained.	5	Steep slopes have the greatest potential for erosion of soils and should be attended to in a more timely manner.		
404.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following:														
(1) Limits of clearing and grading are staked out prior to construction.	5													
(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.	4													
(3) Sediment and erosion controls are installed and maintained.	5													

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action												
			<table border="1"> <tr> <td>(4)</td> <td>Topsoil is stockpiled and covered with tarps, straw, mulch, chipped wood, vegetative cover, or other means capable of protecting it from erosion for later use to establish landscape plantings.</td> <td>5</td> </tr> <tr> <td>(5)</td> <td>Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area by laying lightweight geogrids, mulch, chipped wood, plywood, OSB (oriented strand board), metal plates, or other materials capable of weight distribution in the pathway of the equipment.</td> <td>4</td> </tr> <tr> <td>(6)</td> <td>Disturbed areas are stabilized within the EPA recommended 14-day period (7 days on steep slopes).</td> <td>4</td> </tr> <tr> <td>(7)</td> <td>Soil is improved with organic amendments and mulch.</td> <td>4</td> </tr> </table>	(4)	Topsoil is stockpiled and covered with tarps, straw, mulch, chipped wood, vegetative cover, or other means capable of protecting it from erosion for later use to establish landscape plantings.	5	(5)	Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area by laying lightweight geogrids, mulch, chipped wood, plywood, OSB (oriented strand board), metal plates, or other materials capable of weight distribution in the pathway of the equipment.	4	(6)	Disturbed areas are stabilized within the EPA recommended 14-day period (7 days on steep slopes).	4	(7)	Soil is improved with organic amendments and mulch.	4			
(4)	Topsoil is stockpiled and covered with tarps, straw, mulch, chipped wood, vegetative cover, or other means capable of protecting it from erosion for later use to establish landscape plantings.	5																
(5)	Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area by laying lightweight geogrids, mulch, chipped wood, plywood, OSB (oriented strand board), metal plates, or other materials capable of weight distribution in the pathway of the equipment.	4																
(6)	Disturbed areas are stabilized within the EPA recommended 14-day period (7 days on steep slopes).	4																
(7)	Soil is improved with organic amendments and mulch.	4																
440	Robert Hill NAHB Research Center NAHB Research Center	404.4 Wildlife Habitat Revise as follows	(2) Open space is preserved as part of a wildlife corridor.	This probably needs a definition in Chapter 2.														
441	Robert Hill NAHB Research Center NAHB Research Center	405.1 Driveways and Parking Areas Revise as follows	Driveways or parking areas are shared.	It seems that in a site development all common area driveways and parking areas would be considered as shared. This needs more clarification.														
263	Steven Orłowski National Association of Home Builders NAHB	405.1 Driveways and Parking Areas Delete and substitute as follows	405.1 Driveways and parking areas. For attached or detached single-family homes, driveways or parking areas are shared. In a multi-unit project, parking capacity is not to exceed the local minimum requirements, <u>shared parking agreements are utilized to minimize parking spaces, and waivers are sought for reduced parking below code requirements.</u>	This is only applicable to single-family homes since most multi-family developments have shared driveways and parking areas to begin with. For multi-family and mixed use projects, getting waivers from parking requirement if located near transit or shared parking agreements with neighboring uses can be an effective way to reduce parking areas, impervious surfaces and stormwater runoff.														
442	Robert Hill NAHB Research Center NAHB Research Center	405.3 Cluster Development Revise as follows	(1)	Why have (1) if there is no (2)?														
264	Steven Orłowski National Association of Home Builders NAHB	405.3 Cluster Development Delete without substitution	405.3 Cluster development. Cluster development enables and encourages flexibility of design and development of land in such a manner as to preserve the natural and scenic qualities of the site and is implemented in accordance with the following: (1) Natural or scenic qualities of the site are preserved by utilizing an alternative method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping.	Consolidating this into one paragraph														
443	Robert Hill NAHB Research Center NAHB Research Center	405.4 Zoning Revise as follows	(2) An increase in zoned use on <u>the sites</u> where environmental effects are minimized and infrastructure is readily available and adequate, while providing for reduced development on <u>environmentally sensitive areas within the sites.</u>	The standard addresses one site at a time for land development. These changes clarify how to interpret this practice. It would be helpful to have some guidance on how much of an increase in zoned use is required to earn these points.														
265	Steven Orłowski National Association of Home Builders NAHB	405.4 Zoning Delete without substitution	405.4 Innovative Zoning Techniques. Innovative zoning techniques are implemented in accordance with the following Innovative zoning ordinances or local laws are used or developed for permissible adjustments to population density, area, height, <u>waiver</u> , open space, mixed-use, or other provisions for the specific purpose of open space, natural resource preservation or protection and/or mass transit usage. Other innovative zoning techniques may be considered on a case-by-case basis. An increase in zoned use on sites where environmental effects are minimized and infrastructure is readily available and adequate, while providing for reduced development on sensitive sites.	Zoning in itself is not "innovative." This amendment seeks to clarify what apart from zoning is actually innovative. It also aids waivers from zoning requirements as an innovative technique														

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
270	Steven Orłowski National Association of Home Builders NAHB	405.4 Zoning Add new as follows	405.4 (3)Community-based Amenities (e.g., parks, plazas, mixed-use, open space) are provided that promote higher density living beyond code requirements or promote walkability.	It is unclear what is meant by "Beyond Code Requirement." The term promote walkability has been added as a green benefit of amenities.		
220	Steven Orłowski National Association of Home Builders NAHB	405.5 Wetlands Add new as follows	405.5 Wetlands. Constructed wetlands or other natural innovative wastewater <u>or storm water</u> treatment technologies are used.	7	Constructed wetlands can also be used to treat stormwater pollution through reductions in water flow, velocity and pollutants.	
445	Robert Hill NAHB Research Center NAHB Research Center	405.6 Mass Transit Revise as follows	All residential lots in the site is selected are within one-half mile (805 m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking.	Criteria need to be established for determining the distance in the practice. For large site development some lots may be close enough while other lots are far away. The task group should decide if the distance should be measured from the closed community entrance, the closet boundary, the closest lot, the farthest lot, etc.		
267	Steven Orłowski National Association of Home Builders NAHB	405.6 Mass Transit Add new as follows	405.6 Mass Multi-Modal TransitTransportation (1) A site is selected <u>with a boundary</u> within one-half mile (805 m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking. (3) <u>Bicycle Parking. Bicycle parking and racks shall be indicated on the site plan and constructed for mixed-use and/or multi-family buildings.</u> (4) <u>Bike share programs. Bike sharing programs participate with the developer, and their facilities are planned for and constructed.</u> (5) <u>Car sharing programs. Car sharing programs participate with the developer, and their facilities are planned for an constructed.</u>	This section is about more than just public transportation, it also includes encouraging pedestrian and bicycle parking as well as carpooling and carsharing. Therefore the term "multi-modal " is more applicable. Additional examples of multi-modal activities have been added to this sub-section.		
162	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	405.6 Mass Transit Delete and substitute as follows	405.6 Mass transit access is provided in accordance with one or more of the following: (1) A site is selected within one-quarter mile (402 m) of pedestrian access to existing or planned bus or streetcar stops or one-half mile (805 m) of pedestrian access to one-half mile (805m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking. existing or planned bus rapid transit stops, passenger rail stations, ferry terminals, or tram terminals.	NAHB's practice on proximity to mass transit (501.2; 405.6) offers points to projects located within ½ mile of pedestrian access to a mass transit system, or within five miles of a mass transit station with parking. Setting such a low threshold for proximity significantly reduces the expected environmental benefits of mass transit for the building project, namely, reduced emissions and other impacts from automobile-based transportation. Simply put, being located within five miles of a mass transit station provides very little basis to assume that residents will make use of the transit system on a regular basis, either for commuting or for non-work trips, as would be expected if the building project and the transit station were more closely co-located.		
228	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Add New Section Add new as follows	Considerations should be given to incorporating a model green zoning ordinance in ICC700. The appendix should not be points-based; rather it should read like an ordinance. It should not be overly complex and should focus on a few key elements of green: Orienting lots and buildings such that 80-90% face north / south. There should be a provision for the zoning authority to deem this goal excessive for reasons of the local terrain, etc. Requiring all storm water to be input into an aquifer at either the building site or development level, perhaps up to the level of the 95th percentile rainfall event (rainfall event having a precipitation total greater than or equal to 95 percent of all rainfall events during a 24-hour period on an annual basis.) Use of local water features should be explicitly permitted, such as the use of runoff to supplement or create a local pond/lake. The stormwater management system shall not cause increased erosion or other drainage related damage to adjoining lots or public property. Requirements for pervious hardscape on most of the hardscape surfaces, probably including parts of streets such as gutters, curbs and sidewalks (can some streets be pervious?). Specify pervious as something like: Pervious and permeable pavement/hardscape. Pervious and permeable	A green zoning ordinance would be established at the level of the jurisdiction. Where such an ordinance exists it facilities doing many things proposed in ICC 700. The cost of many decisions, such as how to lay out the streets is often very low in the planning stage, but prohibitive to change after the development is in place. For example orienting lots to be north/south is a very cost-effective way to improve performance. As it will not be appropriate for many jurisdictions and cannot be implemented for a single house, it should remain an appendix.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action						
			<p>pavement/hardscape including open grid paving systems and open-graded aggregate systems shall have a percolation rate not less than 1.25 gallons per hour per square foot and shall have not less than 6 inches (152 mm) of open graded base below the pavement or pavers. Pervious and permeable pavement shall be permitted where the use of these types of hardscapes does not interfere with fire and emergency apparatus or vehicle or personnel access and egress, utilities, or telecommunications lines. Aggregate used shall be of uniform size.</p> <p>Requirements for "cool hardscape / pavements, including their application to streets. Something like:</p> <p>Hardscape materials. <i>Hardscape</i> materials in climate zones 1 through 5 shall have a minimum initial <i>Solar Reflectance</i> of 0.30 when determined in accordance with CRRC-1 or shading. Shading shall be permitted to be provided by elements of a building or other structures, based on the projected peak sun angle on the summer solstice. Shading shall be permitted to be provided by trees based on the projected ten-year canopy growth of trees actually in place.</p> <p>Exceptions: Pervious concrete pavements shall be deemed to comply with the criteria for solar reflectance and need not be tested.</p> <p>Requirements for (not allowances for) thinner streets, with provision to meet fire rules.</p> <p>Compliance with jurisdictional prohibitions against invasive species.</p> <p>Provision for, but not a requirement for, integration of local basic services into the development.</p> <p>Encouragement for bicycle and walking spaces in some form.</p> <p>Integration with park and/or wildlife spaces when reasonable.</p> <p>Reuse of existing structures / infrastructure / materials as is reasonable.</p> <p>Possible provisions for solar access, provided they do not conflict with the cool hardscape/shading requirements.</p> <p>Provision for a jurisdiction to integrate some level of protection/requirement for agricultural land, undeveloped land, infill lots, brownfield development, with the choice being left mostly to the jurisdiction.</p>									
207	Gary Ehrlich NAHB NAHB	Add New Section Add new as follows	<table border="1" data-bbox="568 1376 1507 1643"> <tr> <td data-bbox="568 1376 1289 1461">403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:</td> <td data-bbox="1299 1376 1507 1461"></td> </tr> <tr> <td data-bbox="568 1467 1289 1542">(1) Portions of sites located within a flood hazard area are avoided.</td> <td data-bbox="1299 1467 1507 1542"></td> </tr> <tr> <td data-bbox="568 1548 1289 1643">(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.</td> <td data-bbox="1299 1548 1507 1643"></td> </tr> </table>	403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:		(1) Portions of sites located within a flood hazard area are avoided.		(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.		An important component of sustainable building is mitigation of natural hazards. This change proposes a credit for locating buildings and associated site developments outside of flood hazard areas. Two levels of credits are proposed; one for avoiding the standard Zone A, Coastal A Zones and V Zone areas, defined as those areas subject to a 1% annual flood risk (or the so-called "100-year floodplain"). An additional credit is proposed for avoiding areas subject to a 0.2% annual flood risk, or the so-called "500-year floodplain". This recognizes that flood damage often occurs outside of the standard flood hazard areas mapped by FEMA.		
403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:												
(1) Portions of sites located within a flood hazard area are avoided.												
(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.												
148	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	Add New Section Add new as follows	<p>Green Space</p> <p>A portion of the gross area of the community have been set aside as green space.</p> <p>1 point for each 10% of the community set aside as green space</p>	Encourages on-project green space								
261	Steven Orlovski National Association of Home Builders NAHB	Add New Section Add new as follows	402.4 Builder Agreements. Developer requires builders purchasing lots to build the home to NGBS certified green community bronze level or equivalent.	A site developer can influence the type of structure being built within the community by requiring all builders to build to the NGBS standard or equivalent.								

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
274	Steven Orłowski National Association of Home Builders NAHB	Add New Section Add new as follows	<p>406 SITE MAINTENANCE</p> <p>406.0 <u>The developer takes measures to ensure the long term maintenance of the community will ensure its sustainability as a certified green development/site.</u></p> <p>406.1 Homeowners Association - <u>Prepare for the transition of the green practices and management of the site to eventual management by the homeowners association and/or third parties contracted to maintain and inspect facilities.</u></p> <p>406.2 Sales Agents – <u>Establish a training manual for sales agents selling lots and homes in the community about the value of sustainability and basic practices for buyers.</u></p> <p>406.3 Education - <u>Provide for Educational brochures or newsletters providing guidance to homeowners on green practices.</u></p>	An additional section was needed to provide points to developers that map out a long term strategy for maintenance and education to ensure that the site is maintained as a sustainable community into the future. This is of critical importance once the developer exits the picture and the ownership and management is turned over to homeowners and the HOA.		
160	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Water and Wastewater Infrastructure. <u>Portions of a building site dedicated in perpetuity to open space or similar conservation uses do not have to be located within water and wastewater service areas, providing the open space has no existing development.</u></p> <p><u>Water and wastewater infrastructure do not pass through such open space portions of a project to serve land beyond the project outside of the service area.</u></p> <p><u>In addition, the lot [or site] complies with one of the following requirements:</u></p> <p>-</p> <p><input type="checkbox"/> <u>Option 1 – Existing Water & Wastewater Service: Locate the building on a site served by existing water and wastewater infrastructure; or</u></p> <p><input type="checkbox"/> <u>Option 2 – Planned Water & Wastewater Service: Locate the building within a legally adopted planned water and wastewater service area and provide new water and wastewater infrastructure for the project; or</u></p> <p><input type="checkbox"/> <u>Option 3: In Situ Water and Wastewater Service: Decentralized water or wastewater systems designed and operated so that they have no significant negative impact on ground water or surface water resources (water quality and quantity and habitat) and pose no significant risk to human health.</u></p>	Sections 501.2 and 405.6 consist of practices encouraging siting close to mass transit and other community resources. This is an important means to mitigate the detrimental transportation-related effects of urban sprawl. However, sprawl also has negative impacts from the expansion of water and wastewater infrastructure, which NAHB does not address. EPA recommends that NAHB add a practice to encourage builders to account for these impacts when siting projects and to specifically protect open space from infrastructure development.		
167	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Pollutant discharges. <u>Projects that may generate pollutant loadings that cannot be attenuated by the processes of bio-infiltration or evapotranspiration shall provide additional water quality treatment measures and practices to significantly reduce the probability of pollutants of concern entering surface or groundwaters.</u></p> <p><u>Projects that are located on brownfields, greyfields or other contaminated sites with pollution levels that do not allow for infiltration should use a combination of practices that evapotranspire and harvest and reuse stormwater. Contaminated sites shall be developed such that there is no interference with, or damage to, any response action at the site. Do not use coal tar sealants in any application exposed to stormwater.</u></p>	The standard's existing practices focus specifically on stormwater flow (rates, volumes, etc.). However, NAHB's standard is silent with respect to protecting surface and groundwater quality by minimizing pollutant discharges. EPA would like to see the above requirements added to sections 403 and 503 to ensure the protection of surface and groundwater on building sites.		
175	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Clean diesel. <u>Contract documents obligate contractors to:</u></p> <p><u>(1) Create staging areas for waiting to load or unload materials that are located 100 ft (30 m) or more from any outdoor air intakes, operable openings, and hospitals, schools, residences, hotels, daycare facilities, elderly housing, and convalescent facilities.</u></p> <p><u>(2) Enforce idle reduction policies that limit unnecessary idling to no more than 5 - 15 minutes or to a shorter time as required by local laws.</u></p> <p><u>(3) Document implementation of maintenance plan that follows engine manufacturer</u></p>	Diesel fuel combustion produces air emissions of NOx, PM, and hydrocarbons, with serious human health and environmental impacts. This is a widespread problem; air quality is significantly impaired for large segments of the U.S. due to PM and NOx pollution. EPA estimated that nonroad equipment was responsible for 24 percent of mobile source diesel NOx emissions and almost half of diesel PM2.5 in 2004. Despite the fact that construction equipment produces a substantial portion of diesel emissions, this issue is not addressed by this standard. The impact of construction activity on air quality can be significantly reduced through a series of relatively simple, low-cost steps. Thus, the standard could add an emissions reduction package		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>specifications.</p> <p>(4) Provide emissions control technologies to all equipment not meeting EPA Tier 4 standards in order to reduce particulate matter (PM) and/or nitrogen oxides (NOx) from diesel engines by a minimum of 20% for 50% of the fleet used at the site. All aftermarket emissions control technologies must be verified by EPA or California Air Resources Board (CARB).</p> <p>(5) Document that all equipment uses Ultra Low Sulfur Diesel Fuel that meets ASTM specifications with sulfur levels less than or equal to 15 ppm shall be utilized for non-road diesel engines and equipment.</p> <p>(6) Submit a summary report that includes a copy of the idling/maintenance plan and enforcement policy, and for each piece of equipment: the equipment number, type and make; engine make, horse power and/or kilowatt hour; the emission control device, make, and model; and the type and source of fuel used.</p>	with little financial or technical burden to project developers. We recommend the above set of practices, which could be implemented jointly or individually.		

Chapter 5 – Lot Design, Preparation, and Development

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action																
69	Steve Hale Build Green NM Build Green NM	501.1 Lot Add new as follows	501.1 (4) Lot is in recognized Certified Sustainable subdivision (20 points)	There is no reward for building in a certified sustainable subdivision. Other parts of Lot Design. Should be deleted that really only apply to a subdivision.																		
487	Steven Orlowski National Association of Home Builders NAHB	501.1 Lot Delete and substitute as follows	<p>501</p> <p>LOT SELECTION</p> <p>501.1 Lot. The lot is selected to minimize environmental impact by one or more of the following:</p> <table border="1"> <tr> <td>(1) An infill lot is selected.</td> <td>4</td> </tr> <tr> <td>(2) A greyfield lot or an EPA recognized brownfield lot is selected.</td> <td>5</td> </tr> <tr> <td>(1) Lot Selection in a green community. The Builder has selected a lot within an NGBS certified green community or equivalent on which to build. A Green Community has been developed to avoid steep slopes, avoid environmentally sensitive areas and avoid wildlife habitats, to name a few. Though a prepared lot may not contain these features within its boundaries, additional points should be given to builders for selecting to build within a green community.</td> <td>4</td> </tr> <tr> <td>(2) Urban. An infill lot is selected in an Urban Location.</td> <td>4</td> </tr> <tr> <td>(3) Suburban. An infill lot is selected in a suburban location.</td> <td>4</td> </tr> <tr> <td>(4) Rural/Exurban. An infill lot is selected in a rural or exurban location.</td> <td>4</td> </tr> <tr> <td>(5) Greyfield location. An infill lot is selected that is a greyfield.</td> <td>5</td> </tr> <tr> <td>(6) Brownfield location. An EPA-recognized brownfield lot is</td> <td>5</td> </tr> </table>	(1) An infill lot is selected.	4	(2) A greyfield lot or an EPA recognized brownfield lot is selected.	5	(1) Lot Selection in a green community. The Builder has selected a lot within an NGBS certified green community or equivalent on which to build. A Green Community has been developed to avoid steep slopes, avoid environmentally sensitive areas and avoid wildlife habitats, to name a few. Though a prepared lot may not contain these features within its boundaries, additional points should be given to builders for selecting to build within a green community.	4	(2) Urban. An infill lot is selected in an Urban Location.	4	(3) Suburban. An infill lot is selected in a suburban location.	4	(4) Rural/Exurban. An infill lot is selected in a rural or exurban location.	4	(5) Greyfield location. An infill lot is selected that is a greyfield.	5	(6) Brownfield location. An EPA-recognized brownfield lot is	5	The proposed changes allows builders the option of buying prepared, cleared and graded lots to receive additional points for developing in a green community whereas they may not be able to receive any points presently. Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations. Also, the previous uses on a site or lot that is being redeveloped can also add difficulty to developing in a sustainable manner, and therefore additional points should be awarded accordingly.		
(1) An infill lot is selected.	4																					
(2) A greyfield lot or an EPA recognized brownfield lot is selected.	5																					
(1) Lot Selection in a green community. The Builder has selected a lot within an NGBS certified green community or equivalent on which to build. A Green Community has been developed to avoid steep slopes, avoid environmentally sensitive areas and avoid wildlife habitats, to name a few. Though a prepared lot may not contain these features within its boundaries, additional points should be given to builders for selecting to build within a green community.	4																					
(2) Urban. An infill lot is selected in an Urban Location.	4																					
(3) Suburban. An infill lot is selected in a suburban location.	4																					
(4) Rural/Exurban. An infill lot is selected in a rural or exurban location.	4																					
(5) Greyfield location. An infill lot is selected that is a greyfield.	5																					
(6) Brownfield location. An EPA-recognized brownfield lot is	5																					

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			selected. (3) Addition and Renovation Note: A renovation or addition project is implemented. (Points awarded for using an existing building and infrastructure.)	5		
448	Robert Hill NAHB Research Center NAHB Research Center	501.2 Mass Transportation Add new as follows	(2) Walkways, street crossings, and entrances are designed to promote pedestrian activity are provided. New buildings are connected to existing sidewalks and areas of development. <u>Infrastructure in the community should be considered applicable to this practice.</u>	Chapter 5 is focused on the lot but lots typically do not have walkways, street crossings, etc. This change is intended to clarify the intent of the practice.		
281	Steven Orlowski National Association of Home Builders NAHB	501.2 Mass Transportation Delete and substitute as follows	501.2 Multi-Mass-Modal Transportation (4) Bicycle Use. Bicycle use is promoted by building on a lot located within a community that has rights-of-way specifically dedicated to bicycle use in the form of paved paths or bicycle lanes. Infill lots located within 1/2 mile of a designated bicycle lane by the jurisdiction also receive credit.	This section is about more than just public transportation, it also includes encouraging pedestrian and bicycle parking as well as carpooling and carsharing. Therefore the term "multi-modal" is more applicable. Additional examples of multi-modal activities have been added to this sub-section.		
161	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	501.2 Mass Transportation Delete and substitute as follows	501.2 Mass transportation. A range of mass transportation choices are promoted by one or more of the following: (1) <u>A lot is selected within one-quarter mile (402 m) of pedestrian access to existing or planned bus or streetcar stops or one-half mile (805 m) of pedestrian access to a mass transit system or within five miles (8046 m) of a mass transit station with provisions for parking- existing or planned bus rapid transit stops, passenger rail stations, ferry terminals, or tram terminals.</u>	The practice on proximity to mass transit (501.2; 405.6) offers points to projects located within ½ mile of pedestrian access to a mass transit system, or within five miles of a mass transit station with parking. Setting such a low threshold for proximity significantly reduces the expected environmental benefits of mass transit for the building project, namely, reduced emissions and other impacts from automobile-based transportation. Simply put, being located within five miles of a mass transit station provides very little basis to assume that residents will make use of the transit system on a regular basis, either for commuting or for non-work trips, as would be expected if the building project and the transit station were more closely co-located.		
449	Robert Hill NAHB Research Center NAHB Research Center	502.1 Project Team, Mission Statement and Goals Add new as follows	A knowledgeable team is established and team member roles are identified with respect go greenn lot design, preparation, and development. The project's green goals and objectives are written into a mission statement. <u>For lots without any environmentally sensitive areas, if the developer had a team established for this purpose with identified roles and a written goals, objective, and mission statement for the covenants for homes built in the community support mission, these points may be awarded to the home.</u>	There are two issues with this practice: (1) is the team's mission to focus strictly on the lot design & landscape or the entire project and (2) for builders building on developed lots in a community, this practice seems awkward especially if there are community covenants guiding/restricting what can be done on the lot.		
350	Anthony Floyd City of Scottsdale City of Scottsdale	503.1 Natural Resources Revise as follows	Make line items (1) and (2) mandatory.	Local building departments already require sites plans to identify existing natural and manmade features. A natural resources inventory merely identifies the site's environmental attributes. This is simple and straight forward. As part of this inventory, priority site attributes and resources can be identified and made part of the site development plan. This is a prerequisite for beginning any green building project and should be mandatory for the National Green Building Standard.		
450	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(1) A natural resources inventory is completed under the direction of a qualified professional. <u>For lots without any environmentally sensitive areas, if the developer conducted a natural resource inventory, and that information is made available to the builder, then these points may be awarded based on the development's natural resource inventory.</u>	It seems reasonable to give credit to the home when the activity has been done by the developer on a community wide basis.		
451	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(2) A plan is implemented to conserve the elements identified by the resource inventory as high priority resources. <u>For lots without any environmentally sensitive areas, if the developer conducted a natural resource inventory and the developer implemented a plan to conserve high priority resources, these points are available to the builder provided the builder does not do anything on the lot that violates the community plan.</u>	For developed lots that do not have any sensitive areas, it seems reasonable that this could be done on a community wide basis.		
452	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(3) Items listed for protection in the resource inventory plan are protected under the direction of a qualified professional. <u>When the lot has no high priority resources on the lot itself, if during the construction of the development, the developer met this practice for the entire community, these points may be awarded.</u>	It seems reasonable to give credit to the home when the activity has been done by the developer on a community wide basis.		
453	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(4) Basic training in tree or other natural resource protection is provided for the on-site supervisor. <u>If the builder's supervisor is responsible for the entire community and there are substantial trees or other natural resources in the community and the supervisor has the training required for this practice then these points can be awarded for any lot under the supervisor's control. If the lot specific supervisor has had this training and there are trees</u>	Clarification is needed as to when these points are appropriate.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<u>or other natural resources on or adjacent to the lot in such a way that the construction on the lot would potentially harm them, then these points are applicable. The points are not applicable if there are no trees or natural resources to protect.</u>			
454	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(5) All tree pruning on-site is conducted by a Certified Arborist. <u>When the individual lot is treeless, if during the construction of the development the developer met this practice for trees throughout the entire community, these points may be awarded for the lot.</u>	Guidance is needed to understand when these points should be awarded.		
455	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(6) Ongoing maintenance of vegetation <u>on the lot</u> during construction is in accordance with TCIA A300.	Provide clarification that this practice must be done on the lot rather than in the community.		
70	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	Natural Resources. Natural resources are conserved by one or more of the following: <u>Note: bare subdivision lots do not qualify for points in (1-6)</u>	This clarifies what you can't earn when building on a bare lot.		
71	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	503.1 (1) A natural resources inventory is completed under the direction of a qualified professional <u>or using an appropriate regional resource guide.</u>	Sometimes it is easy to identify salvageable resources without the need to hire an additional professional, especially considering this is for one lot.		
72	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Revise as follows	503.1 (3) Items listed for protection in the resource inventory plan are protected under the direction of a qualified professional <u>qualified personnel (or person).</u>	This expands the scope of who could be qualified to protect resources including the contractor or owner.		
73	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	503.1 (7) <u>If a bare lot in a subdivision adjoins a landscaped common area. A protection plan from construction activities next to the common area is implemented. (5 points)</u>	Allows points for a bare lot for implementing practices that save resources (another change submission suggests barring points in (1-6) of this section 503.1		
456	Robert Hill NAHB Research Center NAHB Research Center	503.2 Slope Disturbance Add new as follows	(3) All or a percentage of roads and parking are aligned with natural topography to reduce cut and fill.	This practice needs significant clarification. Most lots do not have roads but only drive ways. Parking on most single family lots is typically confined to the driveway. Some urban single family lots do not have driveways and use on street parking. If this practice is intended to apply only to multi-unit complexes it should be stated that way. If the practice is to be broadly applied to include roads in the development then guidance is needed on how to apply it (e.g. does the road in front of the house need to align with the topography or is it all roads in the community).		
457	Robert Hill NAHB Research Center NAHB Research Center	503.2 Slope Disturbance Add new as follows	(4) Long-term erosion effects are <u>significantly</u> reduced through the design and implementation of terracing, retaining walls, landscaping, and or restabilization techniques.	This is to provide clarification that any of these practices may be used (not all are required) and to provide guidance on the improvement must be more than minimal. Further guidance on the extent of the improvement necessary would be very helpful.		
74	Steve Hale Build Green NM Build Green NM	503.2 Slope Disturbance Revise as follows	503.2 Slope disturbance. Slope disturbance is minimized by one or more of the following; (Points awarded only if there are developable steep slopes on the lot)	It makes no sense if steep slopes are avoided in the first place (this is just a single lot) As written this would encourage finding steep slopes for development when they should be left alone (think of L.A. in the rainy season)		
75	Steve Hale Build Green NM Build Green NM	503.2 Slope Disturbance Add new as follows	503.2 (1) <u>(d) A lot is chosen with no steep slopes (2 points)</u>	It makes no sense if steep slopes are avoided in the first place (this is just a single lot) (Two other related changes submitted)		
76	Steve Hale	503.2 Slope	503.2(3)	It makes no sense if steep slopes are avoided in the first place (this is just a		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
	Build Green NM Build Green NM	Disturbance Add new as follows	(d) A lot is chosen with no steep slopes (2 points)	single lot)		
351	Anthony Floyd City of Scottsdale City of Scottsdale	503.3 Soil Disturbance and Erosion Revise as follows	Make lines items (1) and (3) mandatory.	Soil exposed by construction activities is especially vulnerable to erosion. Soil erosion contributes to stormwater run-off pollutants and air borne particulates that make up air pollution. Most city and county authorities require a Stormwater Pollution Prevention Plan to minimize stormwater pollutant runoff. Based on the site inventory and an established site plan, it is simple to identify the limits of clearing and grading. Most jurisdictions already require a grading and drainage plan as part of civil engineering and building permit requirements. This process has long been established in the engineering and regulatory process around the country. This should be a prerequisite and therefore mandatory for the National Green Building Standard.		
458	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(1) Construction activities are scheduled to minimize limit the length of time that <u>unstabalized soils</u> are exposed to <u>14 days or less</u> .	Clarification is needed define "minimize". 14 days is the EPA guideline.		
460	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(2) <u>At least 75% of total length of the installed Utilities on the lot</u> are installed using one or more alternative means:	Clarification is needed to define to what extent the installation must meet the practice in order to qualify for the points.		
461	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(3) Limits of clearing and grading are demarcated on the <u>lot</u> plan.	Clarify the practice.		
77	Steve Hale Build Green NM Build Green NM	503.3 Soil Disturbance and Erosion Revise as follows	503.3 (3) Limits of clearing and grading are demarcated on the plan (<u>not awarded for bare lots</u>)	Hard to preserve what is not there or monitor on small subdivision lots that have been scraped bare.		
352	Anthony Floyd City of Scottsdale City of Scottsdale	503.4 Storm Water Management Revise as follows	Make line item (2) mandatory.	Building permit authorities already require site surveys along with a proposed site plan and grading/drainage plan. Most city, town and county authorities have master stormwater surveys and plans to ensure public infrastructure and development will not adversely affect regional drainage paths. This process has long been established in the engineering and regulatory process around the country. A site stormwater management plan should be a prerequisite and therefore mandatory for the National Green Building Standard.		
462	Robert Hill NAHB Research Center NAHB Research Center	503.4 Storm Water Management Add new as follows	Storm water is managed using one or more of the following low impact development techniques: <u>For lots in a development, the points for items (1), (2), and (3) may be awarded for the lot when there is a community storm water management plan implemented and the builder does not violate that plan with respect to water leaving the lot.</u>	This practice is difficult to meet when it is confined strictly to the lot. Allowing credit for coordinating with a site storm water management plan clarifies this practice while still meeting the intent.		
463	Robert Hill NAHB Research Center NAHB Research Center	503.4 Storm Water Management Revise as follows	A storm water management plan...	Is this intended to be a plan for during consturction only or a plan that covers both construction and post construction?		
283	Steven Orlowski National Association of Home Builders NAHB	503.4 Storm Water Management Revise as follows	(4) <u>Green Roof</u> – A minimum of 50% of the roof is to be vegetated <u>uses vegetated roof technology</u> and shall be capable of withstanding the climate conditions of the jurisdiction and the micro climate conditions of the of the building site. <u>Invasive plant species shall not be permitted and selected plants shall not add to the potential for fire hazard in the event of severe drought.</u>	Greater specificity on green roof technology is needed. Also, this section should being with the term "green roof" so that it is more easily identified within the chapter.		
165	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.4 Storm Water Management Add new as follows	(5) <u>Option 1: Stormwater management practices that manage rainfall on-site and prevent the off-site discharge from all storms up to and including the volume of the 95th percentile storm event. Maintain predevelopment (natural) runoff temperatures.</u> <u>Option 2: Conduct a hydrologic analysis that results in the design of a stormwater</u>	The standard's practice on stormwater management is commendable for encouraging the use of low-impact development techniques. However, the practice does not go far enough to ensure that buildings do not have an overly harmful impact on the hydrology of the surrounding area. This section can be strengthened through the development of several additional practices. In place		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<u>management system that maintains the pre-development (stable, natural) runoff hydrology of the site throughout the development or redevelopment process. Post construction runoff rate, volume, duration, and temperature shall not exceed predevelopment rates.</u>	of or in addition to the existing, relatively prescriptive measures in 503.4 and 403.5, EPA recommends a stormwater management practice focusing more on outcomes.		
170	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.4 Storm Water Management Add new as follows	Stormwater management verification. Stormwater rate, volume and duration calculations shall be provided for pre- (stable, natural) and post- development for the 2, 10, 25, 50 and 100 year storm events in addition to other applicable state and local reporting requirements. Infiltration and evapotranspiration strategies and rainwater collection (where allowed) calculations shall be indicated. A long-term maintenance plan for stormwater management practices shall be provided.	In support of the requirements that EPA suggested in a prior comment (ID# 165), we we recommend the above means of verification.		
465	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment.	Clarify the practice.		
466	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	When a lot will be less than 50% turf, 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.	For lots that are substantially all turf it seems inappropriate to award points for a plan to restore the natural vegetation.		
467	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(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.	Clarify the practice.		
468	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(3) A-The percentage of or all turf areas that will be mowed are 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.	Clarify the practice.		
469	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(4) Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan.	Clarify the practice.		
471	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(5) Species and locations for trees or tree planting of at least 3 trees are identified on the lot plan that will provide summer shading of streets, parking areas, and buildings to moderate temperatures within 5 years of completion of the building.	Clarify the practice and to define the extent of implementation required.		
472	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(6) Vegetative wind breaks or channels are designed to protect the lot as appropriate for local conditions.	Clarify the practice.		
473	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(7) On-site (or community generated) tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch on the lot during construction, and cleared trees are recycled as sawn lumber or pulp wood.	Clarify the practice. There have also been a number of requests to allow trees to be used as firewood as an alternative to sawn lumber or pulp wood. If the task group has an opinion on this, additional clarification would be useful.		
78	Steve Hale Build Green NM Build Green NM	503.5 Landscape Plan Revise as follows	503.5 Landscape plan. A landscape plan is developed to limit water and energy use while preserving or enhancing the natural environment, (If "front" only or "rear" only plan is implemented only 1/2 the points (rounding down to a whole number) are allowed for the practices (1-6) in section 503.5.	Many builders landscape the front only and leave the rear to the home owner. Partial credit should be allowed for this practice.		
79	Steve Hale	503.5 Landscape	503.5 (e)	Zoning or covenants that are implemented later by the home owner will still reap		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
	Build Green NM Build Green NM	Plan Add new as follows	(e) no landscape plan is implemented but zoning, covenants or deed restrictions limit turf to , 25% (1 pt)	sustainable benefits.		
171	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.5 Landscape Plan Delete and substitute as follows	(3) A percentage of all turf areas are limited. (a) 0 percent (b) greater than 0 percent to less than 25 20 percent (c) 25 20 percent to less than 40 50 percent (d) 50 40 percent to 75 60 percent	EPA supports the inclusion of a practice restricting turf areas in landscaping, but the minimum target of 75 percent of all landscaping is too low. We recommend that the minimum instead be set at 60 percent, with one additional point awarded for every further 20 percent reduction.		
173	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.5 Landscape Plan Revise as follows	(8) An integrated pest management plan is developed to minimize chemical use in pesticides and fertilizers. An Integrated Pest Management plan is developed, implemented, and maintained that addresses both indoor and outdoor pest control. The plan must include the EPA's Pesticide Environmental Stewardship Program four tiered approach to pest management: 1) Set action thresholds. Before taking any pest control action, IPM first sets an action threshold, the point at which pest populations or environmental conditions indicate that pest control action must be taken to avert a nuisance, health hazard, or economic threat. 2) Monitor and Identify Pests. IPM programs monitor and identify pests and the most appropriate course of action for a particular pest chosen. Monitoring and pest identification ensures that appropriate actions are taken. This could include some combination of prevention and control. 3) Prevention. The first line of defense in any IPM program is the prevention of conditions in or around a building or in an orchard that attract pests – sources of food, water, and shelter. IPM service providers use practices to prevent pests including, but not limited to: a. Customer education including materials for non-English speakers and those with difficulty reading. b. Providing customers with information about pest behavior and conditions, and that allow pests access to the site, food, water, and habitat, so that the customer can understand and participate in the pest management process; c. Irrigation practices, the treatment or removal of plants attractive to pests, and physical changes to reduce pest access to structures; d. Removal of pest habitat, sources of food and water, and breeding areas - keeping premises free of trash and overgrown vegetation, and diverting water away from a building or landscaping to avoid standing water; e. Prevention of access to structures - sealing areas where pests enter the buildings (weatherization). 4) Management. Integration of Multiple Management Strategies and Tools A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest. If identification, monitoring, and action thresholds indicate that pest	The IPM component of the standard's landscape plan (503.5.8; 403.6.9) can be improved in two main ways. First, NAHB should use more specific language to ensure that the IPM plan has a meaningful environmental impact. Secondly, the practice should require the use of pest control operators who are certified in IPM practices. We suggest the above language instead of the standard's current language on IPM.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<p>management is required, and preventive methods are no longer effective or viable, management methods can be and should be employed. Management strategies may include, but are not limited to, the following:</p> <p>a. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers;</p> <p>b. Biological controls including the use of predators, parasitoids, or pathogens to control the pest; and,</p> <p>c. If preventive measures along with the practices in paragraphs 'a' and 'b' directly above are insufficient to prevent or control pests, chemical controls may be used.</p> <p>Note: Under an IPM program, management methods are evaluated based on effectiveness and relative risk. Those methods that are found to both be the most effective and pose the lowest risk are selected first. IPM combines two central methods for reduced-risk pest control:</p> <p>a. Least Toxic Pest Management Options. These include use of physical controls, such as trapping, vacuuming, and steam cleaning.</p> <p>b. Pesticides</p> <p>Pest management is a group activity from the prevention and monitoring phase through the chemical usage decision. All stakeholders should be involved in the decision to use chemicals. For structural situations, this includes the IPM coordinator, pest management professionals, building managers, cleaning staff, etc. In agricultural situations, this includes the crop consultant/scout, grower, and, when appropriate, food processor.</p> <p>Pest management plans should dictate action thresholds and a decision-making process for actions including pesticide selection. Universal notification (advance notice of not less than 72 hours under normal conditions and 24 hours in emergencies before a pesticide, other than a least-toxic pesticide, is applied in a building or on surrounding grounds that the building management maintains). Define emergency conditions. There are best management practices to follow if pesticides are to be used:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read the label first, <input type="checkbox"/> choose the right chemical for a particular pest, and <input type="checkbox"/> have a clear understanding of the proper application rate and method – misuse can harm not only your health but also the environment. <p>When a chemical control method is required within an IPM program, a biological pesticide should be considered first. Biopesticides are usually inherently less toxic than conventional pesticides and decompose quickly so they do not leave persistent chemical residues in the environment.</p> <p>Sometimes a conventional pesticide (synthetic materials that directly kill or inactivate a pest) may be needed for satisfactory pest control. Ideally, all pesticides are used in combination with other lower-risk non-chemical pest management practices. Even within conventional pesticides, there is a progression of best management practices:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use baits and spot treatments are limit unnecessary exposure to chemicals, <input type="checkbox"/> Apply pesticides only as directed by the label, <input type="checkbox"/> Notify customers prior to pesticide applications - ideally, a 24 hour notice before for 			

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<p>applications in or around any building landscape or structure.</p> <p>□ In occupied structures, pest management professionals and/or IPM coordinators must clearly explain to the building occupants how to maintain safe interaction around the treated areas.</p> <p>Hire pest management professionals certified by an EPA Pesticide Environmental Stewardship Program partner organization, such as the National Pest Management Association's Green Pro, IPM Institute's Green Shield, or other programs, as appropriate.</p>			
237	Thomas Stroud HPBA HPBA	503.5 Landscape Plan Add new as follows	503.5(7) On-site tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction or as a base for walking trails, and cleared trees are recycled as sawn lumber, pulp wood or biomass for Solid Fuel Burning Appliance as per Section 901.2.1(2) for on-site <u>renewable energy.</u>	This is in support of the use of on-site renewable energy		
475	Robert Hill NAHB Research Center NAHB Research Center	503.6 Wildlife Habitat Add new as follows	Measures are planned that will support wildlife habitat. <u>The measures to support wildlife habitat should be commensurate with the size and surroundings of the lot. Points are available for lots when community space supports wildlife habitat. The minimum support measures should include at least 2 of the following: area for shelter, natural food source, and natural water source.</u>	Additional guidance is needed to clarify the extent and types of measures that are appropriate and required for various types of lots.		
285	Steven Orłowski National Association of Home Builders NAHB	503.6 Wildlife Habitat Add new as follows	<p>503.6 Wildlife Habitat. Measures are planned that will support wildlife habitat.</p> <p>(1) <u>Plants and gardens that will encourage wildlife, such as bird and butterfly gardens.</u></p> <p>(2) <u>Inclusion of a certified "backyard wildlife" program</u></p> <p>(3) <u>Lots are adjacent to wildlife corridors, fish and game parks, or preserved areas and are designed to be respectful of this relationship.</u></p> <p>(4) <u>Outdoor lighting techniques are utilized to be respectful of wildlife.</u></p>	In Chapters 4 and 5, points are awarded for developers who preserve wildlife habitats on site, as well as provide on-site amenities to encourage urban wildlife. Therefore, it is pertinent to provide a definition to this term to help clarify the verification process.		
478	Robert Hill NAHB Research Center NAHB Research Center	503.7 Mixed Use Development Add new as follows	<u>The building on the lot contains Mixed-uses development is incorporated. These points are intended for buildings that contain mixed use in the building. The points for a mixed use community are awarded in 501.2(3).</u>	This practice is often confused with mixed use development in 501.2(3). This change clarifies that this practice applies only to buildings that have the mixed use within the building.		
479	Robert Hill NAHB Research Center NAHB Research Center	503.8 Environmentally Sensitive Areas Delete and substitute as follows	(1) Environmentally sensitive areas are avoided. The lot does not contain any environmentally sensitive areas that are disturbed by the construction.	This change clarifies that a lot without any sensitive areas or a lot that has sensitive areas but those areas are not disturbed can meet this practice.		
480	Robert Hill NAHB Research Center NAHB Research Center	503.8 Environmentally Sensitive Areas Add new as follows	(2) <u>Compromised environmentally sensitive areas are mitigated or restored. These points are available only if the lot has a compromised environmentally sensitive area on the lot. These points are not available if the sensitive area is damaged during construction of the building. If the sensitive area is damaged by the developer (and the developer is not the builder) or if the sensitive area is otherwise less than pristine, these points may be awarded if the builder makes significant restoration efforts. Points cannot be claimed for mandatory mitigation or restoration of federally-protected sensitive areas unless the mitigation or restoration is greater than that which was required through the federal permit process.</u>	This practice needs to make it clear that to get the points any restoration or mitigation must go above and beyond and government mandated efforts and any damage caused by the builder.		
154	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.8 Environmentally Sensitive Areas Revise as follows	<p>This section should be a mandatory requirement, not one that provides credits.</p> <p>(This proposed change is also being submitted for Section 403.11)</p>	Locational considerations are fundamental to the definition of a green building. Moreover, the importance of environmentally sensitive areas to human health and the environment makes their protection essential in any standard that aims to promote increased environmental protection.		
157	Susan Gitlin US Environmental	503.8 Environmentally	<p>(1) Environmentally sensitive areas are avoided.</p> <p>(2) Compromised environmentally sensitive areas are mitigated or restored.</p>	Locational considerations are fundamental to the definition of a green building. NAHB is notably weaker than other green building rating and certification		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
	Protection Agency US Environmental Protection Agency	Sensitive Areas Revise as follows	<u>(3) Buildings are not erected, and landscape improvements are not conducted, on land that is undeveloped or that has been developed only for agricultural purposes, and that is within a 100-year floodplain.</u>	systems on the issue of site sustainability, and in particular, in discouraging building on environmentally sensitive and valuable lands. NAHB has only one optional credit restricting building in sensitive areas, which nonetheless allows building if the area is to be mitigated or restored. With no specific requirements or definition for mitigation or restoration, nor with a means of enforcement for this provision, this practice is insufficient to guarantee protection of sensitive lands. This shortcoming is a major weakness in the standard. Sections 503.8 and 403.11 should be revised to correct this shortcoming.		
569	Robert Hill NAHB Research Center NAHB Research Center	503.9 Density Revise as follows	The average density <u>on the lot</u> on a net developable area is:	Clarify that the density is based on the individual lot rather than a community wide average.		
163	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.9 Density Add new as follows	<u>(4) The lot [or site] is within one-quarter mile of developed residential land with an average density of at least 8 units per acre.</u> <u>(5) The lot [or site] is adjacent to existing development with pre-project connectivity of at least 90 intersections/mile of any continuous segment equaling 25 percent of the project boundary. Areas excluded from the calculation shall be water bodies, parks larger than 1/2 acre, recreational facilities, public campuses (such as universities), airports, rail yards, areas preserved from development by codified law or prerequisites of the rating system, and land that cannot be developed due to a unique topographic or geologic condition (such as steep slopes). Street rights-of-way may not be excluded.</u>	The standard provides points for densely-built projects in sections 503.9 and 403.12, as well as in several innovative practices for subdivisions in 405. EPA supports these practices, but recommends that NAHB go further by incentivizing buildings or subdivisions to be built adjacent to densely-built areas as well.		
481	Robert Hill NAHB Research Center NAHB Research Center	504.1 Onsite Supervision Add new as follows	On-site supervision and coordination is provided during clearing, grading, trenching, paving <u>on the lot</u> , and installation of utilities <u>on the lot</u> to ensure that specified green development practices are implemented. (also see Section 503.3).	Clarify the practice.		
482	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(1) Fencing or equivalent is installed to protect <u>all trees and other vegetation on the lot or adjacent to the lot that might be disturbed by the construction.</u>	Clarify the practice.		
483	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(2) Trenching, significant changes in grade, and compaction of soil and critical root zones in <u>all "tree save" areas as shown on the lot plan</u> are avoided.	Clarify the practice.		
484	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(3) Damage to designated existing trees and vegetation is mitigated during construction through pruning, root pruning, fertilizing, and watering <u>and these trees and vegetation are healthy at the completion of the project.</u>	Clarify the practice.		
80	Steve Hale Build Green NM Build Green NM	504.2 Trees and Vegetation Revise as follows	504.2 Trees and vegetation. Designated trees and vegetation are preserved <u>on the building lot or adjoining "open" space</u> by one or more of the following:	More clearly defines what points are awarded for. Protecting next door neighbors trees should be standard practice and not awarded points.		
485	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(1) Limits of clearing and grading are staked out <u>on the lot.</u>	Additional consideration should be given to dealing with small urban lot where the lot line and the clearing limits are likely to be one in the same.		
486	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas <u>on the lot or immediately adjacent to the lot</u> from construction activity.	Clarify the practice.		
488	Robert Hill NAHB Research	504.3 Soil Disturbance and	(3) Sediment and erosion controls are installed on the lot and maintained in accordance with the storm water pollution prevention plan, where required.	Clarify the practice.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
	Center NAHB Research Center	Erosion Add new as follows				
489	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(4) Topsoil (from either the lot or the community development) is stockpiled and stabilized for later use and used to establish landscape plantings on the lot.	Clarify the practice.		
490	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Revise as follows	(5) Soil Compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area (laying lightweight geogrids, mulch, chipped wood, plywood, OSB, metal plates, or other materials capable of weight distribution in the pathway of the equipment). <u>This must be done for all heavy equipment used on the lot throughout the construction process.</u>	The commentary appears to limit the need for any of the 504.3 sub-practices to areas outside of the limits of clearing and grading. If that is the intent then the sub-practices should be clarified to make this clear.		
491	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(6) Disturbed areas on the lot that are complete or to be left unworked for 21 days or more are stabilized with 14 days using methods as recommended by the EPA, or in the approved storm water pollution prevention plan, where required.	Clarify the practice.		
492	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(7) Soil for at least 50% of the landscaped area (including turf) is improved with organic amendments and mulch as recommended by a local landscaper.	Clarify the practice and define the extent required.		
493	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Revise as follows	(8) <u>At least 75% of total length of the installed Utilities on the lot</u> are installed using one or more alternative means (e.g., tunneling instead of trenching, use of smaller equipment, use of low ground pressure equipment, use of geomats, shared utility trenches or easements).	Clarify and define the extent of the practice. How does this part of this practice relate to 504.3(5)? Should low ground pressure equipment be added to 504.3(5)?		
83	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	504.3 (1) Limits of clearing and grading are staked out.	Redundant Combine with similar points in 503.3 (3)		
84	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	504.3 (3) Sediment and erosion controls are installed and maintained in accordance with the storm water pollution prevention plan. Where required	Redundant Combine with similar points in 503.4 (2)		
85	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	Utilities are installed using one or more alternative means...	Redundant Combine with similar points in 503.3 (2)		
495	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	505.1 Driveways and Parking Areas Revise as follows	Driveways or Off-street parking areas are shared or driveways are shared for at least 50% of their length. Waivers or variances from local development regulations are obtained to implement such practices, as applicable if required. In a multi-unit project, parking capacity is not to exceed the local minimum requirements.	Clarify and define the extent of the practice.		
318	Erin Ashley National Ready Mixed Concrete Association NRMCA	505.2 Heat Island Mitigation Revise as follows	<div style="border: 1px solid black; padding: 5px;"> <p>505.2 Heat Island Mitigation. Heat island mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area off the hardscape:</p> <p>(1) Shading of the hardscaping: Shade is provided from existing or new vegetation (within five years) or from trellises. Shade of hardscaping is to be</p> </div>	For inclusion of pervious concrete: Pervious concrete should be included in the acceptable reflective materials sections under the heat island credit. The ASTM C1549 solar reflectance test and subsequent calculation of SRI in accordance with ASTM E1980 does not adequately capture the heat island effects of permeable pervious concrete due to their void structure. However, studies have shown that pervious concrete stores less energy, therefore less heat, when exposed to sun over an extended period of time. This heat is not reflected back to the environment resulting in lower external temperatures. Furthermore, moisture trapped within the voids allows the pavements to remain cooler via evaporation. For change in point values: The effect of increase in ambient temperatures in metropolitan areas is apparent when you compare the health of those who reside in the city versus those who reside in more rural areas.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action								
			<p>measured on the summer solstice at noon.</p> <p>(2) Light-colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater</p> <p>(3) <u>Pervious Concrete</u>: Horizontal hardscaping materials are installed <u>with pervious concrete.</u></p> <table border="1" data-bbox="540 479 1339 695"> <tr> <td data-bbox="540 479 1106 546">(1) <u>A minimum of 50% of the Horizontal Surface meets the strategies of 505.2</u></td> <td data-bbox="1106 479 1339 546" style="text-align: center;"><u>4</u></td> </tr> <tr> <td data-bbox="540 546 1106 612">(2) <u>50% to 75% of the horizontal surface meets the strategies of 505.2</u></td> <td data-bbox="1106 546 1339 612" style="text-align: center;"><u>6</u></td> </tr> <tr> <td data-bbox="540 612 1106 695">(3) <u>100% of the horizontal surface meets the strategies of 505.2</u></td> <td data-bbox="1106 612 1339 695" style="text-align: center;"><u>8</u></td> </tr> </table>	(1) <u>A minimum of 50% of the Horizontal Surface meets the strategies of 505.2</u>	<u>4</u>	(2) <u>50% to 75% of the horizontal surface meets the strategies of 505.2</u>	<u>6</u>	(3) <u>100% of the horizontal surface meets the strategies of 505.2</u>	<u>8</u>	<p>Compared to rural areas, cities experience higher rates of heat related illness and death. Heat islands, or areas of dark colored roofing and pavements where ambient temperature is increased, can exacerbate hot weather events or periods, which may cause heat stroke and lead to physical discomfort, heat stroke, organ damage and even death especially in vulnerable populations such as the elderly. The Centers for Disease Control and Prevention (CDC) says that excessive heat claims more lives in the United States each year than hurricanes, lightning, tornadoes, floods and earthquakes combined. Between 1979-1998, the CDC estimates that 7,421 deaths resulted from exposure to excessive heat in the U.S. By reducing the temperature of the pavements through the use of lighter color materials, one may be able to reduce the ambient temperature of our cities, therefore reducing the temperature exposure to its residents. The intent of this code is to provide the best sustainable measures to the general public. With the options for heat island mitigation provided in this credit, it is plausible to achieve the value of 75% or 100% without incurring significant costs; however, the savings in regards to energy, health and decrease in temperature will be measurable. Therefore, additional points should be awarded for these incremental achievements. References: Source: Haselback, L., Kevern, J.T., Hot Weather Comparative Heat Balances in Pervious Concrete and Impervious Concrete Pavement Systems. 2010 Haselbach, L., and A. Gaither. Preliminary Field Testing: Urban Heat Island Impacts and Pervious Concrete. Proceedings NRMCA 2008 Concrete Technology Forum: Focus on Sustainable Development, Denver, CO, May 20-22, 2008 (CD-ROM). Kevern, J.T., Schaefer, V.R., and Wang, K. "Temperature Behavior of a Pervious Concrete System," National Transportation Research Board (TRB) Transportation Research Record 2009a edition. (accepted, publication info pending) www.eere.energy.gov/state_energy_program/project_brief_detail.cfm/pb_id=102 Accessed August 10, 2008 http://www.climate-science.gov/Library/sap/sap4-5/sap4-5prospectus-final.htm Accessed August 10, 2008.</p>				
(1) <u>A minimum of 50% of the Horizontal Surface meets the strategies of 505.2</u>	<u>4</u>													
(2) <u>50% to 75% of the horizontal surface meets the strategies of 505.2</u>	<u>6</u>													
(3) <u>100% of the horizontal surface meets the strategies of 505.2</u>	<u>8</u>													
497	Robert Hill NAHB Research Center NAHB Research Center	505.2 Heat Island Mitigation Add new as follows	Heat Island Mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area of the hardscape <u>on the lot</u> :	Clarify practice.										
286	Steven Orlowski National Association of Home Builders NAHB	505.2 Heat Island Mitigation Add new as follows	<p>505.2 Heat island mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area of the hardscape:</p> <p>(1) Shading of hardscaping; Shade is provided from existing or new vegetation (within five years) or from trellises. Shade of hardscaping is to be measured on the summer solstice at noon.</p> <p>(2) Light colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater.</p> <p>(3) <u>Green Roof Roof – A minimum of 50% of the roof is to be vegetated uses vegetated roof technology and shall be capable of withstanding the climate conditions of the jurisdiction and the micro climate conditions of the of the building site. Invasive plant species shall not be permitted and selected plants shall not add to the potential for fire hazard in the event of severe drought.</u></p> <p>(4) <u>Landscaping Coverage, excluding all impervious surfaces and, including lawns, softscape gardens, and tree canopies:</u></p> <table border="1" data-bbox="540 1628 1339 1844"> <tr> <td data-bbox="540 1628 1106 1695"></td> <td data-bbox="1106 1628 1339 1695" style="text-align: center;"><u>40 – 50%</u></td> </tr> <tr> <td data-bbox="540 1695 1106 1761"></td> <td data-bbox="1106 1695 1339 1761" style="text-align: center;"><u>50 – 60%</u></td> </tr> <tr> <td data-bbox="540 1761 1106 1828"></td> <td data-bbox="1106 1761 1339 1828" style="text-align: center;"><u>60 – 75%</u></td> </tr> <tr> <td data-bbox="540 1828 1106 1844"></td> <td data-bbox="1106 1828 1339 1844" style="text-align: center;"><u>Above 75%</u></td> </tr> </table>		<u>40 – 50%</u>		<u>50 – 60%</u>		<u>60 – 75%</u>		<u>Above 75%</u>	Points are awarded to the developer for green roof technology respective of storm water management. However, points should also be awarded for utilizing green roof technology as well as landscaping in place of "hardscape" for heat island mitigation, as the installation of horizontal "softscape" is proven to reduce the urban heat island effect, not through reflectivity, but through lower heat absorption.		
	<u>40 – 50%</u>													
	<u>50 – 60%</u>													
	<u>60 – 75%</u>													
	<u>Above 75%</u>													
208	Gary Ehrlich	Add New Section	503.10 Flood hazard areas. The development of portions of lots	An important component of sustainable building is mitigation of natural hazards.										

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action				
	NAHB NAHB	Add new as follows	<p>located within flood hazard areas is avoided as follows:</p> <table border="1" data-bbox="550 268 1411 385"> <tr> <td data-bbox="550 268 1299 304">(1) Portions of lots located within a flood hazard area are avoided.</td> <td data-bbox="1299 268 1411 304"></td> </tr> <tr> <td data-bbox="550 304 1299 385">(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.</td> <td data-bbox="1299 304 1411 385"></td> </tr> </table>	(1) Portions of lots located within a flood hazard area are avoided.		(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.		This change proposes a credit for locating buildings and associated site developments outside of flood hazard areas. Two levels of credits are proposed; one for avoiding the standard Zone A, Coastal A Zones and V Zone areas, defined as those areas subject to a 1% annual flood risk (or the so-called "100-year floodplain"). An additional credit is proposed for avoiding areas subject to a 0.2% annual flood risk, or the so-called "500-year floodplain". This recognizes that flood damage often occurs outside of the standard flood hazard areas mapped by FEMA.		
(1) Portions of lots located within a flood hazard area are avoided.										
(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.										
149	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	Add New Section Add new as follows	<p><u>Green Space</u> A portion of the gross area of the community/subdivision in which the lot resides has been set aside as green space.</p> <p>1 pt for each 10% of the community/subdivision set aside in green space</p>	Encourages green space within community/subdivision						
288	Steven Orlowski National Association of Home Builders NAHB	Add New Section Add new as follows	<p>505.3 Lot Design for Climate Conditions and Energy Efficiency.</p> <p>(1) <u>Tree Plantings – Plant Deciduous Trees to the east and west of a lot(s) to create shade</u></p> <p>(2) <u>Plant evergreens to the north and west to block winter winds</u></p> <p>(3) <u>Avoid plantings to the south.</u></p> <p>(4) <u>Locate an alternative energy facility that would generate electricity for the home on the lot. An alternative energy facility may generate electricity using solar, wind or hydro technologies.</u></p> <p>(5) <u>The installation of energy efficient lighting located on the exterior of the home or within the lot.</u></p>	Consolidating all the criteria that relates to climate and energy into one section. Additionally, have added several criteria related to climate and energy efficiency that can be carried out on the lot or site by a builder or developer, and can also be done relatively easily and will have a credible green effect.						
159	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Water and Wastewater Infrastructure. <u>Portions of a building site dedicated in perpetuity to open space or similar conservation uses do not have to be located within water and wastewater service areas, providing the open space has no existing development.</u></p> <p><u>Water and wastewater infrastructure do not pass through such open space portions of a project to serve land beyond the project outside of the service area.</u></p> <p><u>In addition, the lot [or site] complies with one of the following requirements:</u></p> <p><input type="checkbox"/> <u>Option 1 – Existing Water & Wastewater Service: Locate the building on a site served by existing water and wastewater infrastructure; or</u></p> <p><input type="checkbox"/> <u>Option 2 – Planned Water & Wastewater Service: Locate the building within a legally adopted planned water and wastewater service area and provide new water and wastewater infrastructure for the project; or</u></p> <p><input type="checkbox"/> <u>Option 3: In Situ Water and Wastewater Service: Decentralized water or wastewater systems designed and operated so that they have no significant negative impact on ground water or surface water resources (water quality and quantity and habitat) and pose no significant risk to human health.</u></p>	Sections 501.2 and 405.6 consist of practices encouraging siting close to mass transit and other community resources. This is an important means to mitigate the detrimental transportation-related effects of urban sprawl. However, sprawl also has negative impacts from the expansion of water and wastewater infrastructure, which NAHB does not address. EPA recommends that NAHB add a practice to encourage builders to account for these impacts when siting projects and to specifically protect open space from infrastructure development.						
168	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Pollutant discharges. <u>Projects that may generate pollutant loadings that cannot be attenuated by the processes of bio-infiltration or evapotranspiration shall provide additional water quality treatment measures and practices to significantly reduce the probability of pollutants of concern entering surface or groundwaters.</u></p> <p><u>Projects that are located on brownfields, greyfields or other contaminated sites with</u></p>	The standard's existing practices, as well as the additional practices suggested above, focus specifically on stormwater flow (rates, volumes, etc.). However, NAHB's standard is silent with respect to protecting surface and groundwater quality by minimizing pollutant discharges. EPA would like to see the above requirements added to sections 403 and 503 to ensure the protection of surface and groundwater on building sites.						

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<p><u>pollution levels that do not allow for infiltration should use a combination of practices that evapotranspire and harvest and reuse stormwater. Contaminated sites shall be developed such that there is no interference with, or damage to, any response action at the site. Do not use coal tar sealants in any application exposed to stormwater.</u></p>			
176	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Clean diesel. Contract documents obligate contractors to:</p> <p>(1) <u>Create staging areas for waiting to load or unload materials that are located 100 ft (30 m) or more from any outdoor air intakes, operable openings, and hospitals, schools, residences, hotels, daycare facilities, elderly housing, and convalescent facilities.</u></p> <p>(2) <u>Enforce idle reduction policies that limit unnecessary idling to no more than 5 - 15 minutes or to a shorter time as required by local laws.</u></p> <p>(3) <u>Document implementation of maintenance plan that follows engine manufacturer specifications.</u></p> <p>(4) <u>Provide emissions control technologies to all equipment not meeting EPA Tier 4 standards in order to reduce particulate matter (PM) and/or nitrogen oxides (NOx) from diesel engines by a minimum of 20% for 50% of the fleet used at the site. All aftermarket emissions control technologies must be verified by EPA or California Air Resources Board (CARB).</u></p> <p>(5) <u>Document that all equipment uses Ultra Low Sulfur Diesel Fuel that meets ASTM specifications with sulfur levels less than or equal to 15 ppm shall be utilized for non-road diesel engines and equipment.</u></p> <p>(6) <u>Submit a summary report that includes a copy of the idling/maintenance plan and enforcement policy, and for each piece of equipment: the equipment number, type and make; engine make, horse power and/or kilowatt hour; the emission control device, make, and model; and the type and source of fuel used.</u></p>	<p>Diesel fuel combustion produces air emissions of NOx, PM, and hydrocarbons, with serious human health and environmental impacts. This is a widespread problem; air quality is significantly impaired for large segments of the U.S. due to PM and NOx pollution. EPA estimated that nonroad equipment was responsible for 24 percent of mobile source diesel NOx emissions and almost half of diesel PM2.5 in 2004. Despite the fact that construction equipment produces a substantial portion of diesel emissions, this issue is not addressed by this standard. The impact of construction activity on air quality can be significantly reduced through a series of relatively simple, low-cost steps. Thus, the standard could add an emissions reduction package with little financial or technical burden to project developers. We recommend the above set of practices, which could be implemented jointly or individually.</p>		
127	Steve Hale Build Green NM Build Green NM	Entire Chapter 5 Revise as follows	<p>See reason to adjust Table 303 Points Also see suggested change to table 303 submitted</p>	<p>There is too much variation across the country, Availability of lots goes from small bare to large vegetated and the variance of points to be gained does not correlate to how green a project is. Rather than a different point requirement for each Level there should be a threshold level set and then allow all points above the threshold to go to "Additional Points from any category" which can go up as the levels go up.</p>		
182	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Other (include section number and title below) Add new as follows	<p><u>Consider the design of the interconnection of a new structure (or complex/neighborhood of structures) with the existing municipal drinking water system such that dead-ends and low-flow situations are eliminated or minimized by the configuration of the water flow, location of isolation and flow control valves, and the sizing of the distribution mains.</u></p>	<p>To protect water quality and reduce resources needed for water treatment, add this language as an innovative practice under 505.</p>		
910	Greg Washington Courtyard Construction, Inc. self	Entire Chapter 5	<p>See Below</p>	<p>We certified a home that in most chapters achieved gold level or better...However, in Chapter 5, we were not able to collect enough points to go beyond bronze...Therefore, we only achieved a bronze level certification for the overall project... The issue was the fact we were building the home in an established subdivision...There was no slope, trees or water to protect, etc....Since the home was built on a site with little to no environmental issues at risk, we was unable to collect any points for it... It seems there may be a slight disconnect here...We obviously want homes to reach their highest potential of certification...However, the way the program is in its current state, potentially creates a possible disincentive for builders to reach for anything higher than bronze in all categories, if you are only certified to the lowest common denominator... We did the best we could for the price point we were trying to hit and are pleased with the product we put out... A lot of our homes are built in subdivisions and this issue will come up again...We would like to be able to reach a higher level of certification, but will likely be unable to with Chapter 5... Thanks for listening...</p>		