



Earth Advantage<sup>®</sup>  
Community  
PILOT

Measures Resource Guide  
Winter 2010

## **Earth Advantage® Community**

### ***“Sustainable Performance at the Community Level”***

Earth Advantage Community is a comprehensive tool for the third party certification of residential and mixed-use community projects. The Earth Advantage Community standard was launched with support from Energy Trust of Oregon in September 2008. Earth Advantage Institute (EAI) is operating the program as a pilot through summer 2010 in order to solicit stakeholder feedback, identify pilot projects and revise the pilot standard based on comments received.

The current draft of the Earth Advantage Community Pilot incorporates many of the comments and suggestions heard to date in individual meetings with potential builders, green building advocates, and other project partners in the public and private sectors. EAI would like to thank each of the people interviewed for their time and constructive feedback, including Larry Anderson, Pamela Lane, David Bonn, Bonn Designs, Sarah Buckley, Clackamas Community Land Trust, Jay Coalson, Green Building Services, Garth Everhart, Everhart Companies, Kirby Gibson, Salient Properties, Terry Miller, Green Building Services, Stefanie Slyman, Slyman Planning Resources, and Bob Wise, Cogan Owens Cogan. Other comments have also been received, and we would like to thank all who have contributed.

For more information, contact Ann Griffin Earth Advantage Community Program Manager, at (503) 484 700

# natural systems

## Principle 1: Identify opportunities to create a sustainable residential development that minimizes environmental impacts.

1.1	REQUIRED	Points Possible 0 – Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Site Analysis and Assessment</b>				●	●	●
<p><b>Description:</b> Prepare a site analysis and written report that documents the site characteristics and identifies opportunities to minimize environmental impacts and maximize the potential to develop a more sustainable community project. Consider undertaking this measure in conjunction with Measure 20.1 for Sustainable Design Charrette.</p> <p><b>Justification:</b> A thorough site analysis reveals the site’s attributes and functions which increase the ability to design the site to be more ecologically sustainable and to meet the measures in the Earth Advantage Community standard.</p> <p><b>Verification:</b> This measure is accomplished by the development team providing maps at a scale of 1” = 30’ to 1” = 100’ on one or more sheets with accompanying written inventory information for the subject site and surrounding area as designated below.</p> <ol style="list-style-type: none"> <li>1. Wildlife Habitat: ESA critical habitat and fish and wildlife habitat areas and connections to surrounding areas on the site and within a 100’ radius of the site.</li> <li>2. Trees and Vegetation: Stands of trees and vegetation identify significant trees on the site and within a 25’ radius of the site.</li> <li>3. Hydrology: Wetlands, floodplains, riparian areas and drainage areas on the site and within a 100’ radius of the site.</li> <li>4. Topography: Identify slopes greater than 15% and 25% on the site and within a 25’ radius of the site.</li> <li>5. Soils: Evaluate site-specific soil conditions for suitability in using low impact development stormwater management</li> <li>6. Solar Access: Evaluate the site’s potential for solar access, considering topography, location and type of existing trees, and location of buildings and other tall structures or natural features on the site and within a 25’ radius of the site.</li> <li>7. Cultural and historic resources: Identify resources located on the site that may be preserved or incorporated into the development’s community amenities</li> <li>8. Scenic views and vistas: Identify view corridors and vistas which may be incorporated into the development’s layout on the site and within a 100’ radius of the site.</li> </ol> <p>The development team shall also provide a written report that documents the site’s opportunities and constraints to achieve sustainable development based on the site analysis. In the written inventory, please provide a general description of real estate development projects on each of the properties surrounding the site to provide context and contribute to an understanding of site conditions.</p>						

## Principle 2: Define the site’s development envelope and transportation circulation system based upon the primary goal of avoiding detrimental environmental impacts.

2.1	REQUIRED	Points Possible 0 – Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
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<b>Development Envelope and Transportation Circulation System.</b>	●	●	●	
<b>Description:</b> Define the site's development envelope and transportation circulation system to avoid environmental impacts using the site analysis and assessment. Ideally, this definition should be articulated prior to project permitting, while construction plans are at the 30%-60% complete stage.				
<b>Justification:</b> Defining the site's development envelope and transportation circulation system based on the site analysis will result in a context-sensitive design that responds to the site's characteristics, thereby minimizing impacts to water quality, vegetation and soils as well as leading to better site planning for solar access, open space and community amenities. In turn, such context-sensitive design can result in lowered costs for site preparation, road construction and other infrastructure by planning for these with a full understanding of the site's characteristics.				
<b>Verification:</b> This measure is accomplished by the development team providing a site plan for the development envelope and transportation circulation system at a scale of 1" = 30' to 1" = 100' accompanied by a report that describes how the design has responded to the site assessment in Measure 1.1. The report shall demonstrate how the site's natural features and functional values are preserved and how impacts are avoided and minimized. Where impacts to such resources are unavoidable, the report shall include a mitigation plan to mitigate the impacts to the full extent practicable, and as deemed sufficient by the Certification Resource Team.				

### Principle 3: Develop an integrated site stormwater management system using low impact development techniques to minimize environmental impacts.

3.1	REQUIRED	Points Possible 0 – Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Low Impact Development Stormwater Management</b>			●		●	
<b>Description:</b> Using the site analysis in Measure 1.1, develop a storm water management system integrated into the overall site design that mimics pre-development hydrologic conditions through the use of low impact development practices.						
<b>Justification:</b> Low impact development (LID) stormwater practices naturally manage and treat stormwater runoff to minimize erosion and flooding, remove pollutants that degrade water quality and recharge groundwater. This is particularly important for the protection of salmon and trout habitat which have been listed under the Endangered Species Act. Moreover, because LID practices reduce or eliminate the need for conventional storm water conveyance and collection systems, such as curb, gutter, and piping systems, fewer resources are required which results in better resource efficiency and lower costs to the developer. Additionally, typical LID facilities, such as rain gardens, vegetated swales and wet ponds, provide natural and visual amenities in the development. See the U.S. Department of Housing and Urban Development's The Practice of Low Impact Development and other information at <a href="http://www.pathnet.org/sp.asp?id=10043">http://www.pathnet.org/sp.asp?id=10043</a> and <a href="http://www.huduser.org/Publications/PDF/practLowImpctDevel.pdf">http://www.huduser.org/Publications/PDF/practLowImpctDevel.pdf</a>						
<b>Verification:</b> This measure is accomplished by the development team submitting a stormwater management system plan that demonstrates how low impact development practices will be used to mimic pre-development hydrologic conditions through decentralized storm water operations that fully retain and infiltrate stormwater on site. Where LID practices and on-site retention and infiltration are not possible due to documented site conditions or local prohibitions, alternative methods and off-site treatment facilities that equally meet or exceed the intent of this measure may be used as deemed appropriate by the Certification Resource Team.						

**Principle 4: Provide open space within the development to protect natural areas and increase opportunities for access to nature.**

4.1		Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Open Space – Amount</b>					●	●
<p><b>Description:</b> Provide sufficient open space in the development. Open space includes active and passive open space and landscaped common areas. Where natural areas are counted toward the Open Space total, such space must have resource enhancements. The recommended amount of open space depends on the size of the project, as specified below:</p> <p>0-1.9 acres – 7.5% of site area            2.0-4.9 acres – 10% of site area            5.0-14.9 acres – 12.5% of site area            15.0-25 acres – 15% of site area            25.1 or more acres – 20% of site area</p> <p>Adjacent or proximate open areas that permit resident access for the purpose of outdoor recreation or that serve as a permanent outdoor scenic amenity but which are not part of the legal boundaries of the Community project may also be counted toward this open space requirement. In order to be counted, the owner(s) of the adjacent property must provide a signed written agreement or public ordinance describing public ownership. This documentation should indicate that resident access to the space will be permitted and that change to the status of the property will not occur within a minimum of 10 years.</p>						
<p><b>Justification:</b> Open space provides opportunities for natural area protection and increases opportunities for access to nature and active and passive recreation, all of which benefit the development’s residents and, potentially, wildlife.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team providing documentation of the development’s average density and open space calculations. Open space must be placed in an undevelopable tract, conservation easement or dedicated to the public.</p>						

**Principle 5: Locate open space in a manner that increases contiguous open space, parks or habitat areas.**

5.1		Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Open Space -- Location</b>					●	●
<p><b>Description:</b> Site a minimum of 50% of total open space provided in the development adjacent to dedicated open space, public trails, public parks, riparian areas, habitat areas or wildlife corridors. Such open space shall not be separated by built improvements, such as roads, fences or other structures that physically separate the open space unless deemed to be essential for the protection of the adjacent area. In this event, only minor improvements which are not detrimental to wildlife are permitted. Consider the use of cluster development to achieve this measure. Where the site does not abut other open space or natural areas, provide at least half of open space in one contiguous area. Note: If not meeting open space amounts in Measure 4.1, points may only be awarded in this measure when at least 10% of the gross site area is in dedicated open space.</p>						
<p><b>Justification:</b> Contiguous open space provides increased protection of habitat areas, especially wildlife corridors and riparian areas where larger areas provide increased benefits over separate areas of open space which can result in habitat fragmentation. Areas of larger, contiguous open space also increase opportunities for more community-oriented passive and active recreation for residents.</p>						

**Verification:** This measure is accomplished by the development team providing the site plan at the same scale as other submitted plans and indicating the location and type of existing open space adjacent to the development, and the location and amount of open space provided within the development. Open space must be placed in an undevelopable tract, conservation easement or dedicated to the public.

**Principle 6: Maximize solar access to increase energy conservation.**

6.1	Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Solar Access</b>		●	●		●
<p><b>Description.</b> Orient building lots in a manner that will allow for passive solar energy and the potential for active solar energy systems. For developments with an average density less than 20 dwelling units per acre, orient a minimum of 75% of building lots so that longest façade can be built within 30 degrees of due south. For developments with an average density of 20 dwelling units or greater per acre, orient building lots so that at least 60% the dwelling units’ façades can be built within 30 degrees of due south. As an alternative, demonstrate how active solar devices will be feasible for future installation through elements such as roof design and setbacks that will permit solar access to rooftop or comparable devices.</p>					
<p><b>Justification:</b> Planning the site to accommodate passive and potential active solar access provides an opportunity to decrease future energy costs, which is resource efficient and environmentally responsible. The reduced energy costs are also a community benefit.</p>					
<p><b>Verification:</b> This measure is accomplished by the development team providing a site plan that shows the building lots and orientation on the east-west axis, and calculation of the total number and percentage of lots or units meeting the measure. Where active solar access is sought, demonstrate how building orientation, roof design and setbacks will result in unobstructed solar access to future devices. Demonstrate how topography and vegetation will not preclude solar access.</p>					

**Principle 7: Minimize land disturbance, erosion and compaction during construction to avoid negative impacts to the site and surrounding areas**

7.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Grading and Erosion Plan and Practices</b>					●	
<p><b>Description.</b> Use Best Management Practices from 2003 EPA Construction General Permit or local standards, whichever is more restrictive, to develop a grading and erosion plan that:</p> <ol style="list-style-type: none"> <li>1. Minimizes cut and fill by being responsive to the site’s topography</li> <li>2. Avoids filling sections of the site that function as drainage areas to the extent practicable</li> <li>3. Minimizes the time that the site is exposed through a phasing plan</li> <li>4. Avoids unnecessary soil disturbance by establishing site access and staging areas and protecting sensitive areas and other non-graded areas from ground disturbance by equipment and vehicles</li> <li>5. Identifies specific erosion control practices to be employed.</li> </ol>						
<p><b>Justification:</b> Minimizing and managing site grading reduces erosion that decreases water quality and habitat value. Limiting areas of disturbance also helps to reduce the unnecessary soil compaction that stresses established and newly landscaped areas, sensitive trees and other root systems.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team submitting the locally-approved grading and erosion plan and a report describing how points 1-5 have been addressed.</p>						

7.2	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Construction Management Plan and Monitoring</b>					●	
<p><b>Description.</b> Develop a construction management plan that prescribes how practices identified in measure 7.1, grading and erosion plan and practices, are to be monitored during construction. The plan will designate an on-site coordinator to assure that the approved grading and erosion control plan and implementation measures are adhered to by:</p> <ol style="list-style-type: none"> <li>1. disseminating information to subcontractors, vendors and visitors to the site about construction practices and prohibitions, including posted signage and written materials</li> <li>2. enforcing non-compliance</li> <li>3. reporting to the Certification Resource Team during the site preparation phase</li> </ol>						
<p><b>Justification:</b> On-site monitoring of the grading and erosion control plan measures and communication of such requirements to all persons on site is fundamental to ensuring that the conditions of the plan will be met and that the benefits of the grading and erosion plan and practices will be realized.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team designating an on-site coordinator to oversee construction practices in accordance with the grading and erosion control plan. The development team will also submit a written plan that identifies specifically how the grading and erosion control plan's requirements will be communicated and enforced. The designation of an on-site coordinator and the construction management plan is to be submitted and approved prior to the start of construction.</p> <p>During the site preparation phase, the on-site coordinator will provide written documentation of the type and frequency of communication that has been undertaken and photographs which document compliance with the provisions of the grading and erosion control plan. This may be augmented by site visits by the Certification Resource Team depending on the size of the development and/or presence of riparian areas or other sensitive areas.</p>						
7.3		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Stockpile topsoil</b>				●	●	
<p><b>Description.</b> Stockpile disturbed topsoil during construction and re-use on the site after construction.</p>						
<p><b>Justification:</b> The re-use of disturbed soil eliminates the need for the removal or import of soil from the site, which is an efficient use of the site's existing resource and reduces truck traffic related to the movement of soil.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team's on-site coordinator providing photographs of the stockpiled soil and written documentation of its reuse on site. Certification Resource Team site visit may also be undertaken to verify this measure.</p>						
7.4		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Compost Erosion Control Amendment</b>				●	●	
<p><b>Description:</b> Spread a minimum of 2" certified Compost Erosion Control Amendment over all exposed soil at the beginning of the construction cycle. This measure provides for erosion control at the beginning of the construction cycle and provides amendments to the soil after the house is complete. Amendments are typically compost, shredded leaves, or other fine organic matter. If compost is used, it may be tilled in as a soil amendment as landscaping begins. If organic compost is used, 2 points are possible.</p>						
<p><b>Justification:</b> Spreading compost on the exposed soil at the beginning of the construction process helps protect the soil from erosion better than straw or sawdust. Preservation of top soil influences how well plants adapt and survive. Healthier soil promotes plant growth and holds water better.</p>						

**Verification:** This measure is accomplished by the development team’s on-site coordinator providing photographs of the covered soil and written documentation of the type of amendment used. If organic compost used, it must be certified under the US Composting Council Seal of Testing Assurance program. Certification Resource Team site visit may also be undertaken to verify this measure.

**Principle 8: Protect significant trees and increase tree canopy to provide habitat, decrease solar heat gain and to provide windbreaks, stormwater management and erosion control.**

8.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Tree Protection Plan</b>			●	●	●	●
<b>Description.</b> Develop a comprehensive tree protection plan that identifies how all mature trees are to be protected to the extent practicable. Mature tree is defined as a tree in good health that is not considered a nuisance or invasive species, 4” caliper or larger at 4 feet above the ground. Identify practices to be used on site during construction, such as flagging and posting of notices, and identify how the plan will be monitored during construction.						
<b>Justification:</b> Ensuring that trees, especially mature ones, are preserved benefits the development in several ways: reduction in solar heat gain and the provision of habitat, windbreaks, stormwater management and erosion control. Trees also add to the value of residential communities. Therefore, trees must not only be identified for preservation, but they must be actively protected during construction to avoid impacts.						
<b>Verification:</b> This measure is accomplished by the development team preparing a comprehensive tree protection plan that identifies all trees to be preserved in accordance with the site analysis of measure 1.1. This shall include a site plan at the same scale as other submitted drawings, with the location, size and species of tree called out on the site plan. All healthy, non-nuisance mature trees are to be protected, unless it is demonstrated that site conditions prevent protection as verified by the Certification Resource Team. The plan shall also document the specific measures to be employed to ensure such trees are protected during construction, including how this information will be disseminated to contractors. This tree protection plan is to be submitted to and approved by the Certification Resource Team prior to the start of construction. During construction, the developer’s on-site coordinator shall provide photographs of the tree protection measures in place. Certification Resource Team site visit may also be undertaken to verify this measure.						
8.2		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Shading of Hardscaped Surfaces</b>			●	●	●	●
<b>Description.</b> Demonstrate that trees will provide at least 30% shading of streets, sidewalks and other common area hardscaped surface areas within ten (10) years of planting.						
<b>Justification:</b> Hardscaped surfaces retain heat, leading to a heat island effect. Tree canopy provides shades over these surfaces which mitigates heat and can reduce energy costs. Additionally, more trees in the development provides a greater amount of stormwater management, wildlife habitat, windbreak and economic value of the community.						
<b>Verification:</b> This measure is accomplished by the development team providing a tree planting plan that documents the location, type and size of existing and new trees and projected size of tree canopy at 5 years from planting. The plan shall include the calculation of the development’s total hardscaped surface areas (excluding individual building lots) and the area to be shaded by tree canopy expressed as both square feet and as a percentage.						

**Principle 9: Landscape common areas and community facilities with native and low-water plant materials to reduce water consumption and chemical inputs.**

<b>9.1</b>	<b>REQUIRED</b>	<b>Points Possible</b> 0 -- Required	<b>Resource Efficiency</b>	<b>Environmental Responsibility</b>	<b>Healthy Ecosystems</b>	<b>Community Benefit</b>
<b>Prohibited Common Area Vegetation</b>				●	●	
<b>Description.</b> Do not use invasive non-native or noxious vegetation for landscaping of common areas and community facilities, as determined by an approved local or regional planting list...						
<b>Justification:</b> Non-native and noxious vegetation can become a nuisance, overtake native vegetation and require more water and chemical inputs than native vegetation.						
<b>Verification:</b> This measure is accomplished by the development team submitting the planting plan with list of species to be planted and documentation that no plants are invasive non-native or noxious vegetation as listed on a local or regional planting list, such as from the local zoning and development ordinance or agriculture extension office. The provisions of this measure must also be included in the community's CC&Rs or deed restrictions.						
<b>9.2</b>		<b>Points Possible</b> 5	<b>Resource Efficiency</b>	<b>Environmental Responsibility</b>	<b>Healthy Ecosystems</b>	<b>Community Benefit</b>
<b>Native and/or Low-Water Common Area Vegetation</b>				●	●	●
<b>Description.</b> Plant at least 75% of common areas and landscaping of community facilities from an approved local or regional plant list that identifies native and low-water (xeriscape) plant materials. (This does not include community gardens.) No planted material should require permanent maintenance by year round irrigation. Consider plant materials suitable for pollinator habitat when appropriate. A directory of native plants by region can be found at <a href="http://www.plantnative.com/index.htm">http://www.plantnative.com/index.htm</a> . Examples of low-water plants suitable for Central and Eastern Oregon can be found at <a href="http://www.coic.org/cd/stormwater/docs/Manual/App7A_2Xeriscaping.pdf">http://www.coic.org/cd/stormwater/docs/Manual/App7A_2Xeriscaping.pdf</a> and low-water plants suitable for the Portland area and Willamette Valley may be found at <a href="http://extension.oregonstate.edu/yamhill/sites/default/files/native_plant_rec_list.pdf">http://extension.oregonstate.edu/yamhill/sites/default/files/native_plant_rec_list.pdf</a> . Pollinator plant information for Oregon is available at <a href="ftp://ftp-fc.sc.egov.usda.gov/OR/Technical_Notes/Plant%20Materials/PMC13.pdf">ftp://ftp-fc.sc.egov.usda.gov/OR/Technical_Notes/Plant%20Materials/PMC13.pdf</a> .						
<b>Justification:</b> Native plants are naturally suited for the region's climate, thereby requiring fewer chemical inputs or additional water. Low water-use plants inherently require little supplemental watering (native or adapted plants) and/or those that can be established within 1-3 years where they no longer require regular supplemental watering.						
<b>Verification:</b> This measure is accomplished by the development team submitting the planting plan with list of species to be planted and documentation that verifies at least 75% of the common areas and community facility landscaping are planted with native or low-water plants from a local or regional planting list, such as from the local zoning and development ordinance or agriculture extension office. The provisions of this measure must also be included in the community's CC&Rs or deed restrictions.						
<b>9.3</b>		<b>Points Possible</b> 5	<b>Resource Efficiency</b>	<b>Environmental Responsibility</b>	<b>Healthy Ecosystems</b>	<b>Community Benefit</b>
<b>Low Water Use Grass Mixes</b>				●	●	
<b>Description.</b> In areas of common area turf grass, plant a mix of grass species that require less water once they are established. Typically low-water species are seeded instead of applied as rolled turf, which is rarely grown using low water grass seeds.						
<b>Justification:</b> This measure results in water savings for the homeowners association and the municipality, reduces peak demand, and reduces the need for additional fertilizers or pesticides.						
<b>Verification:</b> This measure is accomplished by the development team submitting written documentation of the type of grass mix used and the regional turf grass list in which the mix is identified as appropriate for the region. The provisions of this measure must also be included in the community's CC&Rs or deed restrictions.						

9.4		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Limited Lawn/Turf Area</b>				●	●	
<p><b>Description:</b> Limit turf to functional areas that serve practical uses, such as recreation, pet areas, minor foot traffic or fire protection. This measure rewards lower turf plantings by giving points associated with the amount of turf planted in relation to the developable landscape area. No more than 25% of the total landscaped common area shall be planted with turf.</p> <p><b>Justification:</b> Limiting lawn turf to functional areas can significantly reduce landscape irrigation needs. Up to 50 percent of municipal water use in the summer is for outdoor irrigation. Keeping lawns green and healthy significantly increases landscape watering needs. Less lawn turf means that all the associated products and expenses will be lower, and, thus, have a lower environmental impact. Examples include less fertilizer use, less fertilizer run off through over watering, lower power mowing expenses and their associated impacts of noise, fuel use, and emissions, and lower impact on solid waste in the form of yard clippings.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting the site plan showing the total landscaped area and amount of turf area, with calculations expressed as square footages and percentages. Areas within minimum mandated buffers from riparian areas or other natural resource areas do not qualify for credit towards non-turf areas. However, vegetated buffers provided beyond mandated minimums can be counted toward this calculation. If such areas are included in the calculations, documentation shall clearly demonstrate the location and calculations of the required and additional vegetated buffer areas. The provisions of this measure must also be included in the community's CC&amp;Rs or deed restrictions.</p>						

**Principle 10: Ensure common open space and landscaped facilities are managed to reduce water consumption and minimize impacts to the ecosystem.**

10.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Integrated Pest Management Plan</b>				●	●	
<p><b>Description.</b> Establish and use an Integrated Pest Management (IPM) system for all common open space and landscaped facilities for which pest includes noxious weeds, invasive plants, problem insects, plant diseases, rodents or other organisms that cause problems in the landscapes. IPM is an approach to landscape management that reduces the need for, use of and risk from chemical pesticides, insecticides, herbicides and fungicides traditionally used to combat pests. General information about IPM can be found at the EPA website: <a href="http://www.epa.gov/pesticides/factsheets/ipm.htm">http://www.epa.gov/pesticides/factsheets/ipm.htm</a>.</p> <p><b>Justification:</b> Pesticides, insecticides, herbicides and fungicides can pose risks to human health and the environment. For example, they may be applied when they are not really needed or used or disposed of in a manner that could contaminate water or harm wildlife. Even alternative or organic pesticides can have these unintended consequences if not used correctly. An IPM helps to reduce the need for such compounds and use them only when needed and in the least toxic formulation that is effective against the problem.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting a detailed Integrated Pest Management plan and a copy of the CC&amp;Rs that establish its ongoing use for the development's common open space and landscaped facilities.</p>						

10.2	Points Possible 5 - 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>No Irrigation/Reduced Irrigation of Open Space and Common Area Landscaping</b>			●	●	
<p><b>Description.</b> Do not install irrigation for open space, common area landscaping or turf. Temporary watering for up to 3 years may be installed to help plants get established. Community food gardens are excluded from this limitation.</p> <p><b>Or --</b> Develop an irrigation plan and system that reduces water consumption by 75% over baseline outdoor irrigation water use. Consider elements such as water harvesting, programmable system controllers and systems that can deliver water directly to each plant. See EA Silver measures 9.2.1 - 9.2.5 for examples of specific irrigation techniques.</p> <p><b>Justification:</b> Elimination of permanent irrigation and reduced irrigation results in water conservation and savings to the community for water costs.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting the landscaping plan, planting list and written narrative describing how the plan and plant materials will not require irrigation, and a written statement that no permanent irrigation will be installed. The provisions of this measure must also be included in the community's CC&amp;Rs or deed restrictions.</p>					

<b>Principle 11: Reduce light pollution to promote dark skies and limit impacts on trees and wildlife.</b>					
11.1	Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Shielded Community Light Fixtures</b>				●	●
<p><b>Description.</b> Install fully-shielded street lights and other non-residential community light fixtures for a minimum of 90% of all light fixtures. As an alternative, demonstrate how exterior light fixtures will be placed under porches, eaves or comparable settings such that there is no light spillage.</p> <p><b>Justification:</b> Light pollution can disturb wildlife and interfere with tree growing cycles. Additionally, light pollution diminishes the ability of residents to see the night sky.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting the lighting plan and lighting specifications for the development's street and community lighting fixtures.</p>					
11.2	Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Shielded Dwelling Unit Light Fixtures</b>				●	●
<p><b>Description.</b> Require the use of fully-shielded outdoor lighting fixtures for all dwellings. This requirement does not apply to light fixtures that are permanently installed under a porch roof, eaves or equivalent structure where light spillage will not occur.</p> <p><b>Justification:</b> Light pollution can disturb wildlife and interfere with tree growing cycles. Additionally, light pollution diminishes the ability of residents to see the night sky.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting documentation of CC&amp;Rs or deed restrictions limiting outdoor lighting on homes to shielded lighting.</p>					

# built systems

## Principle 12: Encourage the use of redevelopment and infill sites to maximize existing infrastructure and reduce greenfield development.

12.1		Points Possible 5 - 15	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Infill, Greyfield and Brownfield Redevelopment</b>			●	●		●
<p><b>Description.</b> Develop an infill site or site served by existing transportation, sewer and water (5 points) or redevelop a greyfield site with at least 50% impervious area (10 points). Redevelopment of a brownfield site qualifies for 15 points total.</p> <p><b>Greyfield:</b> A greyfield site is traditionally defined as an area that has been previously developed, with at least 50 percent of the surface area covered with impervious material. (10 points)</p> <p><b>Brownfield:</b> A brownfield is an abandoned, idle, or under-used industrial or commercial site, where construction is complicated by real or perceived environmental contamination. This measure develops a site that has been classified as a brownfield and provides remediation as required by EPA's Brownfield Redevelopment or other applicable Federal program requirements. (15 points)</p> <p><b>Justification:</b> Locating development on infill sites results in greater efficiency of public and private infrastructure. Infill and grayfield site redevelopment reduces development on greenfield sites which helps to preserve open space and natural areas. The redevelopment of brownfield sites is eligible for 15 points to reflect the significant benefits that accrue to the greater public from the cleanup of environmental hazards.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting a site plan showing surrounding areas and public services and/or documentation of the site as a grayfield or brownfield.</p>						
12.2		Points Possible 15	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Proximity to Public Transit and Designated Bike Routes</b>			●	●		●
<p><b>Description.</b> Develop a site where at least 75% of the residences are located within ¼ mile of a bus stop or designated bike route or within ½ mile of a light rail station, street car stop or commuter rail station.</p> <p><b>Justification:</b> Residents are more likely to use public transit if it is in proximity to their homes, with people more willing to travel further distances for fixed-rail systems such as light rail. The use of public transit helps to reduce vehicle miles traveled which contributes to resource efficiency and environmental responsibility. The proximity to designated bike routes increases the likelihood of using cycling as an alternative mode of transportation and is eligible for 5 out of the 15 possible in this measure.</p> <p><b>Verification:</b> This measure is accomplished by the development team providing a site map showing the type and location of public transit or designated bike route in proximity to the proposed development and the number of dwelling units located within ¼ / ½ mile as measured along <i>accessible</i> pedestrian or vehicular routes. If bike route only, project eligible for maximum of 5 points.</p>						

12.3		Points Possible 15	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Proximity to Neighborhood-Serving Goods and Services</b>				●		●
<p><b>Description.</b> Demonstrate that there are at least three (3) permanent neighborhood serving uses within ¼ mile or six (6) such permanent uses within ½ mile of the perimeter of the project boundaries as measured along <i>accessible</i> pedestrian, bicycle or vehicular routes. Examples of eligible uses include grocery store, post office, public school, library, community center, convenience store, café, coffee shop, video store, copy shop or dry cleaner. Comparable uses that provide neighborhood-serving goods and services may be considered by the Certification Resource Team.</p>						
<p><b>Justification:</b> The typical single-family household generates 10 vehicle trips per day, many of which are to tend to activities such as grocery shopping and general errands. Locating a development in proximity to typical neighborhood-serving uses increases the likelihood that residents will walk or cycle, thereby reducing vehicle miles traveled.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team submitting a vicinity map showing the location, distance and type of neighborhood serving use to be counted toward this measure.</p>						

<b>Principle 13: Increase density to promote efficient land use and transportation and the preservation of open space.</b>						
13.1		Points Possible 25	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Maximize Density</b>			●	●	●	
<p><b>Description.</b> Develop to at least 90% of the highest density permitted by the local jurisdiction for the subject site but no less than an average of 7 dwelling units per net acre as determined by the Earth Advantage Community standard density calculation described in the program glossary. If cluster development is used, demonstrate that the density for the gross development envelope, including streets and common areas, meets density standards of this measure and that remaining land is placed in an undevelopable tract.</p>						
<p><b>Justification:</b> Higher density leads to more efficient use of land that can preserve natural areas and open space. It also maximizes the use of infrastructure, thereby reducing both public and private costs. Higher density also typically results in a better land use/transportation connection that reduces vehicle miles traveled and supports current and future public transit and infrastructure provision.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team submitting documentation demonstrating the local jurisdiction's maximum density for the site, excepting densities achieved through bonuses, and the average density achieved by the development.</p>						

**Principle 14: Develop neighborhood-scale and neighborhood-serving mixed uses to meet community needs within the development.**

14.1		Points Possible 5-25	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Mixed Use</b>				●		●
<b>Description.</b> Develop or dedicate land for new neighborhood commercial or institutional uses such as those described in measure 14.3 within the development project boundaries. Five points will be awarded for each use, up to a maximum of 25 points.						
<b>Justification:</b> Vertical and horizontal mixed use development reduces automobile trips by siting commercial uses with residential ones, thereby placing residents in proximity to the type of commercial uses they need. Additionally, mixed-uses can increase a sense of place and community for the development.						
<b>Verification:</b> This measure is accomplished by the development team submitting the site plan that shows the type, location and size of neighborhood serving commercial and institutional uses within the development.						

**Principle 15: Construct all dwellings and community structures to industry-recognized green development standards to ensure that overall community is more sustainable.**

15.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>EA Silver or LEED for Homes Certification</b>			●	●	●	●
<b>Description.</b> Require that all dwelling units and community facilities are certified as Earth Advantage Silver or LEED for Homes structures.						
<b>Justification:</b> The construction, operations and maintenance of individual dwelling units and community facilities within the development will have a substantial and continuing impact on the development's ability to promote resource efficiency, environmental responsibility and healthy ecosystems. Therefore, a measure to ensure that the homes within the development are also constructed to sustainable standards is critical.						
<b>Verification:</b> This measure is accomplished by the development team submitting a recorded copy of the CC&Rs that requires each dwelling unit to be certified to the Earth Advantage Silver standard or LEED for Homes standard. Community facilities of a non-residential nature are subject to the applicable certification offered by either Earth Advantage or LEED.						
15.2		Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Green Community Structures</b>			●			
<b>Description.</b> Build community structures, such as play structures, fences, and gazebos, with a minimum of 50% green materials such as FSC-certified wood and recycled content materials. Locally-sourced materials, originating within 500 miles of the development site may also be used toward meeting this measure.						
<b>Justification:</b> Community structures serve as some of the most visible aspects of the development and should be representative of the development's overall sustainability ethic.						
<b>Verification:</b> This measure is accomplished by the development team submitting a copy of site plan indicating the type and location of community structures and a description of materials and amount of material used.						

## Principle 16: Promote alternative energy sources to reduce dependence on fossil fuels and reduce emissions.

16.1		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Street Lighting and Common Areas Alternative Energy Sources</b>			●	●		
<b>Description.</b> Use photovoltaic panels, wind-power or comparable non-fossil fuel based energy source for all street lighting and common area lighting.						
<b>Justification:</b> Alternative energy sources can reduce energy costs and pollution. In particular, photovoltaic (PV) panels harness energy from the sun, a free source of energy. Additionally, PVs do not generate pollution. Other suitable alternative energy sources such as on-site or off-site wind-power generate less pollution. This contributes to resource efficiency and environmental responsibility. Lower energy costs contribute to community benefit.						
<b>Verification:</b> This measure is accomplished by the development team submitting the lighting plan and lighting specifications to demonstrate that all street lights are primarily powered by alternative energy sources that do not use fossil fuels or result in on-site pollution. This must be included in the Development's CC&Rs.						
16.2		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Community Facilities Alternative Energy Sources</b>			●	●		
<b>Description.</b> Use alternative energy sources for at least 50% of energy needs of community facilities, such as community centers and recreational facilities that require energy.						
<b>Justification:</b> Alternative energy sources such as solar and wind power decrease dependence on fossil fuels and result in lower or no pollution, thereby contributing to resource efficiency and environmental responsibility. Additionally, alternative energy sources may contribute to lower energy costs, which is a community benefit.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation to demonstrate how 50% of the energy needs of all community facilities are met by alternative energy sources.						

## connecting & transportation systems

### Principle 17: Design the transportation circulation system for a high level of connectivity, transportation choice and safety.

17.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Connectivity</b>				●		●
<b>Description.</b> Where topography and adjacent uses allow, create full connections for vehicles, pedestrians and bicycles to surrounding areas at average intervals no greater than 800'. Provide for internal street connectivity at average intervals no greater than 400' where topography allows. If full connections are not practical or cul-de-sacs are incorporated into design, include pedestrian and bike connections at a minimum.						
<b>Justification:</b> Connecting the community externally to other areas and internally helps to distribute traffic more evenly and allow for more direct travel, which reduces congestion and shortens trips. The increased options for connectivity and more direct travel also increases the potential for more pedestrian and bicycle trips, which results in reduced vehicular trips thereby reducing congestion, air pollution and noise.						
<b>Verification:</b> This measure is accomplished by the development team submitting a dimensioned site plan that indicates the location of and distance between full street connections, and connections between streets and walking paths/bike paths, with calculations of average spacing of internal and external connections. If topography prevents connectivity, the site plan shall include contour lines.						

17.2	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Slow Streets</b>			●			●
<p><b>Description.</b> Design local and collector streets (private and public) for a maximum speed of 20 mph and minor and major arterials for a maximum speed of 25 mph. If these speeds are not allowed by the local jurisdiction, design to the lowest speed permitted and incorporate traffic calming measures and narrow street design. See also related Action 19.1 for which additional points can be earned related to efficient street design.</p> <p><b>Justification:</b> Slower speeds are safer for pedestrians, and virtually resident of a community will at one time or another be a pedestrian or be accompanied by a pedestrian. At 20 mph, 95 percent of pedestrians are likely to survive being struck by a vehicle and at 30 mph only 55 percent of pedestrians are likely to survive a crash. Additionally, driving slowly consumes less fuel than driving at higher speeds, and is therefore also more resource efficient.</p> <p><b>Verification:</b> This measure is accomplished by the development team providing documentation of the functional classification of the development's existing and proposed streets, the local jurisdiction's design speeds, and design speed employed for each street.</p>						
17.3		Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Sidewalks/Walkways</b>				●		●
<p><b>Description.</b> Provide sidewalks or hard-surfaced pedestrian walkways for a minimum of 75% of the lineal street frontage (both sides). Consider combining with Actions 19.5 and 19.6 to reduce impervious area and use of raw materials and designing as part of the stormwater management system in Principle 3. If streets are designed to minimum widths permitted by the jurisdiction and are of a design speed of 20 mph or less, an alternative measure may be proposed to demonstrate how pedestrians will be accommodated in a safe and pleasant manner, such as through woonerf street design.</p> <p><b>Justification:</b> Providing dedicated, safe pedestrian facilities increases the likelihood that people will choose walking as an alternative to driving, thus reducing vehicle miles traveled. This in turn can contribute to increased health benefits associated with walking and a decrease in the use of fossil fuels, air pollution and noise.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting a dimensioned site plan showing the location, width and surface treatment of sidewalks or pedestrian paths. If an alternate treatment is proposed, provide supporting documentation to be reviewed for sufficiency by the Certification Resource Team.</p>						
17.4		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Enhanced Pedestrian and Bike Connectivity</b>				●		●
<p><b>Description.</b> Provide additional pedestrian and bike connections to community amenities, transit stops and the larger community in addition to primary circulation system. Consider combining with Actions 19.5 and 19.6 to reduce impervious area and use of raw materials.</p> <p><b>Justification:</b> Increased connectivity for pedestrians and cyclists to destinations in the development and beyond increases access to these modes of transportation which, in turn, increases the likelihood that people will choose them as alternatives to vehicular travel. This in turn can contribute to increased health benefits from walking and cycling and a decrease in the use of fossil fuels, vehicular congestion, air pollution and noise.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting a site plan showing the location, width and surface treatment of the additional pedestrian and bike connections and the destinations to which they connect.</p>						

17.5		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Shared Roadway Bike Enhancements</b>				●		●
<b>Description.</b> Where bike facilities are shared in the roadway provide signage, striping or alternate paving treatment to increase awareness of the shared facility.						
<b>Justification:</b> Safety is cited as a primary reason that people do not use bicycling for commuting or running errands. Providing an increased awareness of the shared roadway through visual clues can increase safety for cyclists. In turn, safer cycling can encourage more people to choose cycling as an alternate mode of transportation which leads to a reduction in the use of fossil fuels, vehicular congestion, air pollution and noise.						
<b>Verification:</b> This measure is accomplished by the development team submitting a site plan and design details of the bike enhancements within the shared roadway. Projects that are able to place shared bike enhancements on adjacent public right of way leading to the project will be awarded the corresponding number of points.						
17.6		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Crosswalks and Crossing Safety</b>						●
<b>Description.</b> On streets with a design speed of 25 mph or greater provide signalized or signed pedestrian and bike crossings with curb extensions or pedestrian islands to facilitate safe crossings at average intervals no greater than 400'.						
<b>Justification:</b> Visual signals help motorists to be aware of crosswalks, increasing safety for pedestrians and cyclists. Curb extensions and pedestrian islands help especially to increase visibility for all and provide shorter street crossings. Safer street crossings support walking and cycling, which leads to decreased vehicle miles traveled.						
<b>Verification:</b> This measure is accomplished by the development team submitting a site plan indicating the roadway design speeds, locations of crosswalks, and design details of the crosswalks. Projects that are able to place crosswalks and crossing safety amenities on adjacent public right of way leading to the project will be awarded the corresponding number of points.						
<b>Principle 18: Provide amenities to support the use of alternative modes of transportation.</b>						
18.1		Points Possible 3	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Bike Amenities</b>				●		●
<b>Description.</b> Provide secure, sheltered bike parking at community facilities, gathering areas, transit stops, private shuttle stops or carpool meeting areas. Bike parking to be located in visible areas directly accessible to the subject facility's main entrance or access point.						
<b>Justification:</b> Bike parking facilities reduce barriers to cycling by ensuring that bikes can be securely stowed and sheltered, thereby increasing the potential for this mode of transportation. This in turn can result in reduced vehicular trips and less congestion, air pollution and noise. Additionally, cycling can lead to improved health.						
<b>Verification:</b> This measure is accomplished by the development team submitting design details and specifications for bike parking facilities and the location of the facilities within the development. Installation to be inspected by field verification.						

18.2		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Pedestrian Amenities</b>			●			●
<b>Description.</b> Provide pedestrian amenities throughout the development, including but not limited to benches, pedestrian scale lighting, water fountains, trash cans, interpretive and directional signage and public art.						
<b>Justification:</b> Safe, sheltered and well-lit transit shelters with pedestrian amenities support the use of transit, especially in inclement weather and hours of darkness. This can increase the likelihood of using transit as a mode of transportation, which leads to lowered demand for fossil fuels, less congestion, air pollution and noise. Additionally, walking can contribute to improved health and opportunities for community interaction.						
<b>Verification:</b> This measure is accomplished by the development team submitting design details and specifications for transit and pedestrian facilities and the location of the facilities within the development. Installation to be inspected by field verification.						
18.3		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Transit Amenities</b>			●			●
<b>Description.</b> Provide sheltered and lighted transit shelters						
<b>Justification:</b> Safe, sheltered and well-lit transit shelters with pedestrian amenities support the use of transit, especially in inclement weather and hours of darkness. This can increase the likelihood of using transit as a mode of transportation, which leads to less congestion, air pollution and noise.						
<b>Verification:</b> This measure is accomplished by the development team submitting design details and specifications for transit and pedestrian facilities and the location of the facilities within the development.						

**Principle 19: Promote efficient street design, the use of pervious surfaces and alternative construction materials to reduce stormwater runoff and the use of raw materials.**

19.1		Points Possible 5 - 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Narrow Street Width</b>			●		●	
<b>Description.</b> Design streets at minimum street width permitted by the jurisdiction for at least 75% of the circulation system, with parking on one side of the street or no on-street parking. If alleyways are incorporated into the design, 100% of streets must be designed to minimum permitted width. Minimum street width with parking on one side only (may be alternating) is eligible for 5 points. Minimum street width with no on-street parking is eligible for 10 points.						
<b>Justification:</b> Streets account for the vast majority of impervious surfaces in a development, which leads to increased storm water runoff, reduced water quality, and degradation of riparian habitat. Reducing street widths decreases the amount of impervious surface area, which also results in lower road construction and maintenance costs.						
<b>Verification:</b> This measure is accomplished by the development team submitting a dimensioned site plan indicating road widths, documentation of the local jurisdiction's minimum road width standards and calculation of the measurement of streets within the development that meet the minimum 75% standard, expressed in lineal feet and as a percentage.						

19.2	Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Reduced Cul-de-sac Size</b>		●		●	
<p><b>Description.</b> If cul-de-sacs are used in the circulation system, design to minimum size permitted by local jurisdiction and incorporate bioretention areas in them to detain and treat stormwater runoff. Another option in place of cul-de-sacs that can achieve points under this measure is to replace cul-de-sacs with "T" or "Y" turnarounds, looped turnarounds, or auto courts with pervious surfaces.</p> <p><b>Justification:</b> Typical cul-de-sacs create large areas of pavement that generate large volumes of stormwater and contribute to reduced water quality. Designing smaller cul-de-sacs that incorporate bioretention areas can help to mitigate these impacts. The use of other design alternatives such as a "T" turnaround can also reduce the amount of impervious surface area in the development. For example, the typical 60' x 20' "T" turnaround, results in a paved area only 43% as large as the smallest cul-de-sac with a 30' radius, resulting in far less impervious area. See the U.S. Department of Housing and Urban Development's The Practice of Low Impact Development at <a href="http://www.pathnet.org/sp.asp?id=10043">http://www.pathnet.org/sp.asp?id=10043</a>.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting design details of the cul-de-sac, turnaround or auto court including dimensions, surface treatment and bioretention and treatment facilities. Documentation of the local jurisdiction's minimum cul-de-sac and turnaround dimensions must also be provided.</p>					
19.3	Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Shared Driveways</b>		●		●	●
<p><b>Description:</b> Design the circulation system and building lots with a minimum of 50% shared residential driveways no greater than nine feet wide.</p> <p><b>Justification:</b> Combining driveways and ensuring a maximum width reduces impervious surfaces and reduces the number of access points onto the roadway which decreases the potential for conflict with other vehicles, pedestrians and cyclists.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting a dimensioned site plan demonstrating the number and width of shared driveways expressed as a total number and percentage of total driveways.</p>					
19.4	Points Possible 1	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Minimize Parking</b>		●		●	
<p><b>Description.</b> Provide only minimum required parking for community and commercial uses. Promote shared parking.</p> <p><b>Justification:</b> Supplying parking beyond the minimum required for the use promotes driving over other modes of transportation such as walking and biking. It also results in a greater use of resources for the construction of the parking lot and, typically, a greater amount of impervious area that affects stormwater runoff and water quality.</p> <p><b>Verification:</b> This measure is accomplished by the development team submitting calculations of the jurisdiction's minimum parking requirements and amount of parking provided for non-residential (community and commercial uses) in the development. Where applicable, demonstrate how parking is reduced through shared parking areas and agreements.</p>					

19.5		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Pervious Hardscaped Surfaces</b>			●		●	
<b>Description.</b> Use a minimum of 25% pervious treatments such as pervious concrete, pervious asphalt, pavers or alternative treatments for hardscaped common elements including streets, sidewalks, paths, parking areas and plazas.						
<b>Justification:</b> Pervious surfaces allow for groundwater infiltration which promotes groundwater recharge and which reduces flooding and impacts to water quality and wildlife.						
<b>Verification:</b> This measure is accomplished by the development team submitting calculations of total hardscaped street surface area and amount of surface area with pervious treatment, expressed as total square footage and a percentage of the total. Provide documentation of the pervious treatment(s) specifications.						
19.6		Points Possible 2	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Recycled Content Hardscaped Surfaces</b>			●			
<b>Description.</b> Use a minimum of 30% recycled content pavement such as concrete with fly ash or blast furnace slag additives or asphalt with glass for hardscaped common elements including streets, sidewalks, paths, parking areas and plazas.						
<b>Justification:</b> Recycled content material reduces the need for raw materials thereby contributing to resource efficiency.						
<b>Verification:</b> This measure is accomplished by the development team submitting calculations of total paving material used for the hardscaped common elements and quantity of recycled content paving material expressed as cubic yards and a percentage of the total. Provide documentation of the recycled content paving treatment(s) specifications and areas of application.						

## community systems

Principle 20: Engage professional expertise and community in the project to identify opportunities for more sustainable development compatible with surrounding areas.						
20.1		Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Sustainable Design Charrette</b>			●	●	●	●
<b>Description.</b> Conduct a design charette with professionals qualified in sustainable site design, stormwater management, natural resource planning, energy conservation and comparable disciplines to develop project goals and identify opportunities to minimize negative impacts and maximize sustainability.						
<b>Justification:</b> A design charette allows participants to share ideas and provide meaningful input early in the project development phase. This multi-disciplinary approach helps to identify issues and opportunities that can lead to increased sustainability as well as cost savings in the design and construction phase of the development.						
<b>Verification:</b> This measure is accomplished by the development team submitting a report listing the participants and areas of expertise and summarizing the topics of discussion and key points of the charette.						

20.2		Points Possible 10	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Community Input</b>						●
<b>Description.</b> Meet with the designated neighborhood/citizen association and property owners within a 500' radius of the project site boundaries to discuss the project, solicit input and share information about sustainable practices.						
<b>Justification:</b> Engaging surrounding neighbors and neighborhood associations provides the development team with an opportunity to solicit input from surrounding property owners regarding their ideas and concerns, as well as share information about the project. This can help to avoid issues of neighborhood compatibility that may emerge, as well as build support for the project with surrounding property owners.						
<b>Verification:</b> This measure is accomplished by the development team submitting a report summarizing the neighborhood meeting and how input has been considered. If the development process is beyond the site planning phase, this measure can be satisfied by conducting a neighborhood meeting prior to beginning site preparation. At this stage the intent of the meeting is to inform neighbors about the development, its sustainability measures and construction schedule, addressing concerns where practicable.						

**Principle 21: Provide a diverse housing stock that meets a range of lifestyles, incomes and ages to create sustainable communities accessible to more people.**

21.1		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Diversified Housing Products</b>						●
<b>Description.</b> Offer diversified housing products by including at least two distinct housing products in the development, with at least a mix of 70%/30% of total dwelling units. Examples of diversified housing products include attached single family, detached single family, row houses, garden apartments and condominiums.						
<b>Justification:</b> Diversifying the types of housing products avoids homogeneity of housing and meets a greater range of lifestyle needs, thereby making an Earth Advantage Community attainable to broader range of residents.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation of the number and percentage of housing types planned or constructed within the development. Requires legally-binding requirement with builder or deed restriction on lots to ensure that units are built to plan.						
21.2		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Aging in Place and/or Universal Design Housing Units</b>			●			●
<b>Description.</b> Provide at least 25% of all housing units for "aging in place" or universal design dwelling units.						
<b>Justification:</b> Aging in place units provide housing for the fastest-growing segment of the population and allow for people to remain in their dwelling unit or community for a longer period of time, thus avoiding costly moves or retrofits to homes to accommodate changing needs. Similarly, Universal Design allows for continued residence in a housing unit regardless of age or ability.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation of the number and percentage of qualified aging in place units planned or constructed within the development. Requires legally-binding requirement with builder or deed restriction on lots to ensure that units are built to plan.						

21.3		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Median Income Housing</b>						●
<b>Description.</b> Provide 15% or more of all housing units at prices affordable to at least 100% of area's median income.						
<b>Justification:</b> Sustainable communities should be open to a range of income levels. Providing for housing units that are affordable to at least the median income is one way to achieve this goal in an Earth Advantage Community development.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation of the median income for the jurisdiction (City or County) in which it lies and the number and percentage of affordable housing units planned or constructed within the development. Requires legally-binding requirement with builder or deed restriction on lots to ensure that units are built to plan.						
21.4		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Rental Housing</b>						●
<b>Description.</b> Provide 15% or more of all housing units as planned rental housing; typically apartment buildings.						
<b>Justification:</b> The inclusion of rental housing in the development allows for an alternative to home ownership that can broaden the types of residents in the community and diversify the development's offerings.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation of the number and percentage of planned rental units within the development. Requires legally-binding requirement with builder or deed restriction on lots to ensure that units are built to plan						
21.5		Points Possible 5	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Accessory Dwelling Units</b>			●	●		●
<b>Description.</b> Provide Accessory Dwelling Units (ADUs), for at least 25% of the single-family dwellings.						
<b>Justification:</b> ADUs are an efficient way to increase density within the development and make use of existing infrastructure and community facilities. It also creates opportunities for extended family living, home offices and the ability for homeowners to earn rental income or downsize without leaving the community.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation of the number and percentage of Accessory Dwelling Units within the development. Requires legally-binding requirement on builder or deed restriction on lots to ensure that units are built to plan.						

**Principle 22: Provide amenities within the community that meet a range of age and lifestyle needs and facilitate opportunities for community connections.**

22.1	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Minimum Community Amenities</b>						●
<b>Description.</b> For developments with 20 or fewer total dwelling units, provide a minimum of three (3) community amenities. For developments of 21 or more units; provide five (5) or more amenities. Examples of community amenities include community gardens, farmers market area, community meeting facility, home office services center, overnight guest quarters, park benches and common seating area, centralized public notice area; recreational facility; community plaza, developed park, community-scale alternative transportation facilities, composting facility, or other comparable community amenity of this scale.						

<b>Justification:</b> Sustainable communities provide residents with more than homes; rather they are more complete communities which meet multiple needs of the residents such as recreation, interaction and self-sufficiency. Community amenities address these needs and are integral to Earth Advantage Community developments.						
<b>Verification:</b> This measure is accomplished by the development team submitting a site plan and written report identifying the type, location, purpose, size and design of community amenities and the intended number of residents the amenity can serve. For example, a community garden should indicate the size and number of individual garden plots and the total number of projected residents in the community who will likely utilize the garden. The Certification Resource Team will review proposed amenities to ensure they are of a sufficient quality and scale for the development.						
<b>22.2</b>		<b>Points Possible</b> 3 to 15	<b>Resource Efficiency</b>	<b>Environmental Responsibility</b>	<b>Healthy Ecosystems</b>	<b>Community Benefit</b>
<b>Bonus Community Amenities</b>						●
<b>Description.</b> Provide additional community amenities beyond minimum required, 3 points per amenity up to 15 additional points.						
<b>Justification:</b> Additional amenities will provide even greater opportunities to meet community needs within the development.						
<b>Verification:</b> This measure is accomplished by the development team submitting documentation as described for Minimum Community Amenities.						

<b>Principle 23: Ensure that Earth Advantage Sustainable Communities maintain and promote sustainability efforts and adapt to new opportunities to achieve sustainability</b>						
<b>23.1</b>	<b>REQUIRED</b>	<b>Points Possible</b> 0 -- Required	<b>Resource Efficiency</b>	<b>Environmental Responsibility</b>	<b>Healthy Ecosystems</b>	<b>Community Benefit</b>
<b>Earth Advantage Community Certification Maintenance</b>			●	●	●	●
<b>Description.</b> For developments with 20 or more dwelling units, establish or use an existing legal entity, such as a Homeowners Association, to: <ul style="list-style-type: none"> <li>• Conduct an annual sustainability education event for the community</li> <li>• Administer CC&amp;Rs specific to Earth Advantage certification</li> <li>• Report annually to Earth Advantage on the community's compliance with the above items.</li> </ul> Annual reporting will be achieved by submitting an information form on the Earth Advantage Institute website. This form will ask for any updates on added property to the project, and any community events that took place during the year						
<b>Justification:</b> Sustainable communities do not end at the point of initial occupancy or build out. Annual reporting and education ensure that the community continues to abide by Earth Advantage Community certification standards, therefore ensuring that the certification continues to have merit.						
<b>Verification:</b> This measure is accomplished by the development team submitting the documentation of a legal entity tasked with the requirements above. Annual community sustainability education event and reporting required per schedule to be developed at conclusion of certification process.						

23.2	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Covenants, Conditions and Restrictions (CC&amp;Rs)</b>			●	●	●	●
<p><b>Description.</b> In addition to CC&amp;Rs required for Integrated Pest Management, irrigation restrictions and construction of all dwelling units to EA or LEED standards, adopt CC&amp;R language which clearly states that the Homeowners Association or other legal entity cannot adopt CC&amp;Rs that prohibit property owners from pursuing common sustainability actions. CC&amp;Rs may include reasonable limitations regarding siting and design specifications as long as these specifications do not reduce the project's ability to maintain Earth Advantage Community standards. Local zoning may prohibit or limit these uses or activities, but residents within an Earth Advantage Community will not further do so. The following activities and uses shall be protected through CC&amp;Rs:</p> <ul style="list-style-type: none"> <li>• Solar or Wind Energy Devices</li> <li>• Clothes lines</li> <li>• Gardens, green houses and home gardening</li> <li>• Individual recycling or composting facility</li> <li>• Bike parking or storage facilities</li> <li>• Home offices</li> <li>• Accessory Dwelling Units</li> </ul>						
<p><b>Justification:</b> CC&amp;Rs are typically established to ensure that individual residents keep up their properties and abide by community design standards in order to maintain property values. In the same vein, the requirements for CC&amp;Rs under this measure ensure that the sustainability efforts of residents are not impeded.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team submitting a copy of the CC&amp;Rs or comparable deed restrictions addressing the applicable elements of the Earth Advantage Community certification measures.</p>						
23.3	REQUIRED	Points Possible 0 -- Required	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Educational Materials</b>			●	●	●	●
<p><b>Description.</b> Provide comprehensive educational materials to new residents, both homeowners and tenants, regarding the development's sustainable features specifically the list of measures within the Community standard which were achieved. If there is a homeowners' association or equivalent organization, provide an annual education event and community reporting requirement to maintain Earth Advantage Community certification.</p>						
<p><b>Justification:</b> Educational materials will help maintain the energy, environmental and community features that were incorporated into the development.</p>						
<p><b>Verification:</b> This measure is accomplished by the development team submitting a copy of the educational materials and ensuring that such materials are delivered to homeowners at the time of occupancy, in addition to any other educational materials or manuals that may be delivered as part of Earth Advantage Silver or LEED for Homes certification.</p>						

	Points Possible 40	Resource Efficiency	Environmental Responsibility	Healthy Ecosystems	Community Benefit
<b>Innovative New Measure</b>					
<b>Description.</b> Up to 40 points can be awarded for innovative measures. Points will be determined by value of the proposed measure relative to existing program measures. Innovation points can be counted toward the minimum optional points required in each of the four categories: Natural, Built, Connecting & Transportation and Community, with up to 20 points in any one category.					
<b>Justification:</b> Given the variety of site conditions, development opportunities and community desires, no single program can anticipate every possible measure that can lead to better sustainability. Therefore, the Innovative New Measure allows developers to propose measures that may equally or better achieve this goal.					

To become a certified Earth Advantage Community, a development project needs to meet each of the required measures and achieve half of the points available for the optional measures in each of the four system categories.

<b>EARTH ADVANTAGE COMMUNITY PILOT PROJECT CERTIFICATION</b>					
	<b>NATURAL SYSTEMS</b>	<b>BUILT SYSTEMS</b>	<b>CONNECTING &amp; TRANSPORTATION SYSTEMS</b>	<b>COMMUNITY SYSTEMS</b>	<b>TOTAL</b>
# of Total Measures	20	9	15	12	56
# of Required Measures	8	1	2	4	15
# of Optional Measures	12	8	13	8	41
Optional Points Available	65	100	55	55	275
50% point level	33	50	28	28	139

Earth Advantage Community Pilot. The standard described in this resource guide is the pilot for Earth Advantage Community standard. Please submit your comments or questions about the pilot standard directly to the program manager. Earth Advantage Institute will continue to solicit feedback through the end of the pilot phase. *Thank you.*

Contact Ann Griffin, Earth Advantage Community program manager, with questions or comments. 503 477 9907. [agriffin@earthadvantage.org](mailto:agriffin@earthadvantage.org).