



Guidelines for Complying with the King County Green Building and Sustainable Development Ordinance

September 2018

This document was developed by the King County Solid Waste Division GreenTools Team with the guidance of the King County County-wide Green Building Team. Consultant assistance was provided by O'Brien & Company and Rushing.



Table of Contents

Introduction.....	4
Purpose	4
Defining Eligibility for Capital Projects	5
Non-LEED Eligible Capital Projects	6
Alternative Green Building Rating Systems.....	6
Training.....	6
Reporting Requirements.....	6
Project Checklist	9
How to Use This Guide	11
Sustainable Infrastructure Scorecard	11
Documentation Checklist.....	12
Determining Your Score	12
Future Updates	12
Scorecard Implementation Guide	13
Required Elements for a Sustainable Development Project & Prerequisites	13
Planning and Designing for Sustainable Development (PD).....	24
Construction Best Management (CM).....	34
Preserve and Maintain Natural Site Amenities (SA).....	40
Equity and Social Justice (ESJ).....	48
Reduce Energy Use and Promote the Use of Renewable Energy (EN)	57
Water Management (WM)	70
Use of Sustainable Materials (SM)	75
Enhanced Performance (EP).....	83
Identify Historic Resources and Promote Their Preservation (HP)	86

Introduction

The Green Building and Sustainable Development Ordinance 17709, adopted on December 9, 2013 (<http://your.kingcounty.gov/solidwaste/greenbuilding/documents/green-building-ordinance-2013.pdf>), requires that capital projects use either the Leadership in Energy and Environmental Design (LEED) Rating System, King County Sustainable Infrastructure Scorecard (Scorecard), or approved alternative green building rating system to integrate cost-effective sustainable development practices into infrastructure projects. In addition, it requires King County divisions ensure that capital projects staff obtain regular training in green building and sustainable development. Project teams are responsible for reporting on the green building strategies and training implemented.

Purpose

This document provides guidance to King County Divisions to meet the requirements of the Green Building and Sustainable Development Ordinance. It provides general guidance for all capital projects, as well as specific guidelines for non-LEED capital projects, including how to use the Scorecard developed by the King County Green Team to track implementation of sustainable development practices for these projects, and specific guidance on achieving each of the actions included in the scorecard.

This document is not intended to replace green building scorecards developed or under development by individual Divisions to assist Division Project Managers in assessing sustainable development practices integrated into capital projects. In fact, those scorecards will be helpful in providing specifics for the summaries required by the ordinance. For that reason, the appendices of this document include the referenced scorecards.

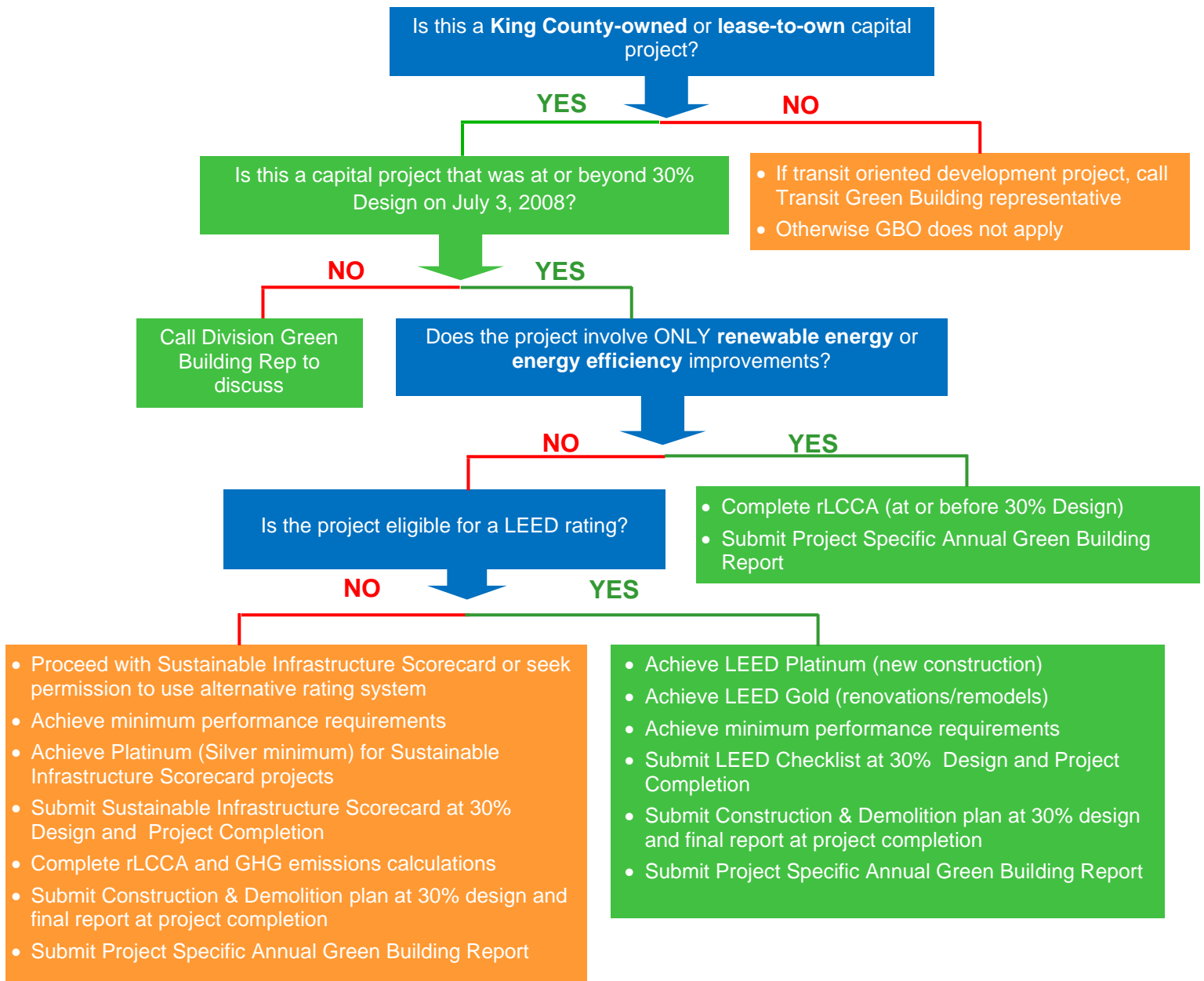


Figure 1: Decision Process to Determine Type of Capital Project
 *rLCCA: resource Life Cycle Cost Assessment

Defining Eligibility for Capital Projects

The ordinance defines a “LEED-eligible building” as a “new construction project larger than five thousand gross square feet of occupied or conditioned space as defined in the Washington state energy code, which is chapter 51-11 WAC, or a major building remodel or renovation project.” A major remodel or renovation is further defined as “work that demolishes space down to the shell structure and rebuilds it with new interior walls, ceilings, floor coverings and systems, when the work affects more than twenty-five percent of a LEED-eligible building’s square footage and the affected space is at least five-thousand square feet or larger.” See Appendix G for a list of items required of Project Managers working on LEED-eligible buildings.

A “non-LEED eligible” capital project, as defined in the ordinance, is a project “where the scope of the project or type of structure limits the ability to achieve LEED certification.” All projects that do not meet the definition of LEED-eligible are therefore mandated to follow the requirements of the “non-LEED eligible” or infrastructure portion of the ordinance. If the project only includes renewable energy or energy efficiency improvements, project managers must complete the rLCCA and annual reporting form.

Non-LEED Eligible Capital Projects

The scorecard is intended to provide consistency across the Divisions for reporting purposes. King County Divisions’ capital projects, however, differ greatly in terms of type and scope. As a result, meeting the intent of the ordinance’s requirements and goals will vary from division to division. The Wastewater Treatment Division has already developed customized scorecards that contain appropriate LEED-credits as well as items that focus on non-LEED goals of sustainability, such as social equity and economic vitality. These scorecards are provided in Appendix E, which is organized by relevant King County Divisions.

Alternative Green Building Rating Systems

The following alternative rating systems may also be used for projects that are not eligible for LEED: Built Green 4 Star, Living Building Challenge, Evergreen Sustainable Development Standard, Sustainable Sites, and Salmon Safe. Pre-approval is required from the Department Director, in consultation with the King County Green Building Team, prior to use of an alternative rating system.

Training

The Ordinance requires that all Project Managers receive training and yearly refreshers in LEED or sustainable development practices. The type of training may be different between divisions. Examples of training include short sessions integrated into staff meetings, intensive day-long sessions, conferences, and on-line curriculum.

Reporting Requirements

30% Design Requirements

The project manager must submit to the County-wide Green Building Team Division representative (see Appendix G for a list of representatives) a copy of the relevant scorecard (may be division-specific scorecard or the King County Sustainable Infrastructure Scorecard, LEED checklist, or alternative rating system checklist) when the project is at 30% design development, along with the anticipated Construction and Demolition plan.

Completion Requirements

The project manager must submit to the County-wide Green Building Team Division representative an updated copy of the relevant scorecard (may be division-specific scorecard or the King County Sustainable Infrastructure Scorecard, LEED checklist, or alternative rating system checklist) that reflects actual green building practices when the project is completed, along with the final Construction and Demolition report.

Annual Reporting Requirements

The project manager must submit information to the County-wide Green Building Team Division representative regarding green strategies, greenhouse gas savings, energy and water savings, waste diversion rates and fiscal issues on an annual basis. The annual reporting form is available in Appendix F. Reporting elements are detailed below.

Green Strategies

Green building and sustainable development strategies employed

Document the sustainable development or “green” strategies used in this project. Provide either a list or paragraph summary. Project managers can use the same tools developed by the divisions to document relevant credits and sustainable development strategies that were used for the information submitted at 30% design development or at completion of the project.

Projected & actual waste diversion rate

Record the total amount of materials produced during demolition and construction. Provide the amount (in tons and diversion percentage) that was diverted from the landfill. Projected waste diversion rate refers to anticipated savings based on the construction and demolition plan at 30% design. Actual waste diversion rate refers to the actual ratio of waste that was diverted from the landfill at project completion.

Environmentally preferable products used

List or describe in a paragraph green materials used during construction. Example green material characteristics include high recycled content, locally manufactured or harvested, certified with a green industry standard, and low life cycle impact.

Also list or describe the renewable resources used in the project. Include the use of renewable fuels or energy used during construction or operation, rapidly renewable materials, or other sustainably extracted materials.

Projected & actual energy savings

List or describe in a paragraph the equipment installed to reduce energy consumption. Provide the amount of energy saved (in kWh/year). Projected savings refers to anticipated savings at 30% design. Actual savings refers to anticipated savings based on actual equipment installed at project completion.

Projected & actual water savings

List or describe in a paragraph the equipment installed to reduce water consumption. Provide the amount of energy saved (in gallons/year). Projected savings refers to anticipated savings at 30% design. Actual savings refers to anticipated savings based on actual equipment installed at project completion.

Greenhouse Gases

Projected & actual greenhouse gas savings

Report the projected greenhouse gas emissions for the project, with and without adopted mitigation strategies (in metric tons of CO₂ equivalent/year). If unable to quantify the greenhouse gas emissions, document the primary sources of emissions as well as the mitigation strategies adopted to reduce the climate change impact of the project. Projected savings refers to anticipated savings at 30% design. Actual savings refers to anticipated savings based on equipment installed and strategies implemented at project completion.

Fiscal Performance

Additional costs associated with achieving certification

Provide the additional costs – in dollars, for the life of the project – associated with achieving LEED or Scorecard certification compared to completing the project without certification. Provide a summary of the specific aspects of the project associated with additional costs (with a description and dollar amount).

Operations and maintenance costs projected prior to construction

Provide the projected operations and maintenance costs for the project. Some divisions collect this information in the standard fiscal reporting form. If not, state the costs for operations and maintenance expected for the project post-completion.

A report of fiscal performance including project costs and benefits

Provide a summary of the costs and benefits that can be quantified over the life of the project. Use the standard provided by the division to calculate this information.

Project Checklist

The project checklist below is provided to help track requirements for infrastructure projects.

Planning, when the Project Manager is assigned to the capital project

- Determine if the project is LEED-eligible. If LEED-eligible, follow LEED guidelines.
- If determined non-LEED eligible, review checklist, annual report, scorecard and guidelines to see what will need to be recorded in the future.
 - If considering an alternative rating system, seek approval from Department Director, in coordination with the County's Green Building Team and your division representative.
- Review training taken by the Project Manager in the past year to see if the content included sustainable development practices or LEED.
- If no training covering the above topics was taken, seek appropriate training.
- Initiate Integrative Process (IP) practice in project management

Planning, well before 30% Design Development:

- Include green building requirements in procurement documents where applicable.
- Hold eco-charrette or similar meeting. Invite appropriate staff to ensure that designers, engineers, occupants, etc. are part of the conversation. Save meeting minutes with list of attendees in project file.
- Design to meet the following minimum performance requirements (for applicable projects):
 - Meet King County [Strategic Climate Action Plan](#) energy and climate goals; ensure that energy efficiency is given the highest priority.
 - Meet King County [Surface Water Design Manual](#) standards and requirements (regardless of where project is located). If local jurisdiction standards are more stringent than County standards, implement the more stringent requirement
 - By 2025, achieve an 85% diversion rate for construction and demolition materials, with 80% diversion rate by 2016.
- If LEED-eligible, identify relevant LEED credits.
- If not LEED-eligible, identify other relevant sustainable development strategies to be integrated into project. The project scorecard can be a guide for this process.

Reporting, submit at the completion of 30% Design Development:

- A copy of the project scorecard to the County-wide Green Building Team Division representative.
- Construction and Demolition report (anticipated plan).
- Complete resource Life Cycle Cost Assessment (rLCCA) and save in division project file.
- Complete GHG emissions calculation (projected emissions) and save in division project file.

Reporting, compile and submit at project completion:

- A copy of the project scorecard to the County-wide Green Building Team Division representative.
- Construction and Demolition report (actual plan).
- Update GHG emissions calculations as needed (based on actual material used, transportation, etc.) and save in project file).

Reporting, complete annual reporting form (see Appendix F) by January 31 and return to County-wide Green Building Team Division representative (see Appendix G)

- Annual reporting form including:

- Summary of green or sustainable development strategies implemented
- Reductions in greenhouse gas emissions
- Energy savings
- Water savings
- Construction and Demolition report (at project completion)
- Amount of construction waste recycled (diversion rate and tonnage)
- List of renewable resources used
- List of green materials used
- Operations and maintenance costs projected prior to construction
- A report of fiscal performance including project costs and benefits

How to Use This Guide

All projects not required to achieve LEED certification under the ordinance must complete a project scorecard at 30% design and project completion. As noted earlier, projects may use the King County Sustainable Infrastructure Scorecard or a division-specific scorecard, if available. Project managers should check with your division County-wide Green Building Team member to determine which scorecard to use for your project. See the King County Sustainable Infrastructure Scorecard in Appendix A. For examples of division-specific scorecards, see Appendix E. For projects implemented as part of a program with construction costs less than \$750,000 each, project managers can complete one scorecard for the overall program rather than one for each project.

Sustainable Infrastructure Scorecard

The Sustainable Infrastructure Scorecard was developed using concepts that are the basis of the LEED® rating system, adapted to more appropriately apply to non-LEED eligible infrastructure projects in King County. The resulting Scorecard includes nine sections, including a set of prerequisites, seven sets of credits (optional items) organized by key topics of sustainability, and an additional set of credits (also optional) for enhanced performance. This Guide provides information for achieving each prerequisite and credit. A copy of the Sustainable Infrastructure Scorecard is available in Appendix A.

For your reference, information about each prerequisite and credit is organized in the following standardized sections:

Intent:

Explains the main environmental, fiscal, and/or social goals of the prerequisite or credit.

Requirements:

Describes the criteria that fulfill the prerequisite or credit and the number of points available. The prerequisites must be achieved unless the requirements are outside the scope of the project type. There is a “Not-Applicable” (N/A) check box on the scorecard for prerequisites or credits that don’t apply to your project. For some credits, there are two or more options with cumulative points. For example, your project can earn up to 4 points for Credit 3: Reduce Energy Use with the first point earned for 20% energy reduction and additional points earned for 30%, 40%, and 50% energy reductions. Documentation for each prerequisite or credit is described within the requirements section.

Additional Guidance:

Provides recommendations for achieving the prerequisite or credit’s requirements. A project team is not obligated to follow the guidance. They may choose to develop a unique approach as long as it fulfills the prerequisite or credit’s requirements.

Implementation Examples:

Provides examples where the prerequisite or credit was used in a King County project along with the King County Project Manager’s name as a resource for information.

Implementation Resources:

Provides references and weblinks to external resources that can help the project team understand how to approach, implement, and document the prerequisite or credit’s requirements. For example, a web link to greenhouse gas calculators will help a team fulfill Prerequisite 3: Account and mitigate for greenhouse gas emissions.

Documentation Checklist

The purpose of the documentation checklist (see Appendix B) is to help organize and record your project's fulfillment of the prerequisite and credit requirements and share your results with the King County Green Building Team for the benefit of continual learning and improvement. The documentation checklist parallels the structure of the Sustainable Infrastructure Scorecard. Submit the documentation checklist along with the supporting documentation and scorecard when your project and project documentation is complete.

Determining Your Score

The resulting Sustainable Infrastructure Scorecard includes nine sections, including a set of prerequisites, seven sets of credits organized by key topics of sustainability, and an additional set of credits for enhanced performance. There are a total of 55 points available for credits. In reviewing the scorecard, you will notice that each credit is followed by three columns. The "Yes" (Y) column denotes credits that are likely to be achieved (at 30% reporting) or have been achieved (at 100% completions). The "No" (N) column denotes credits that are applicable to the project but that are not likely to be achieved or have not been achieved. The "Not Applicable" (N/A) column denotes credits that are not applicable to a particular project and will not be attempted.

To determine the score for your particular project, identify credits that are outside the scope of the project type and are thus deemed "Not Applicable." The points for these credits are then eliminated from the total points, or the denominator. The score is then calculated based on how many of the remaining points are achieved. Then, based on the percentage of the points achieved (see Table 1), determine the rating for the project. For example, if a maintenance facility project were pursuing and likely to achieve 20 out of the 40 points applicable to the project based on its scope, it would be considered by the County as on track to receive a Sustainable Infrastructure Scorecard Silver Rating.

Table 1: Sustainable Infrastructure Scorecard Ratings, Percent Points Achieved

Platinum	75% or above of total points
Gold	57% or above of total points
Silver	48% or above of total points
Bronze	38% or above of total points

Future Updates

This is a living document that will be updated occasionally. Future versions will likely include revisions to the prerequisite and credit requirements, such as changes to performance thresholds, along with additional guidance, implementation examples and resources pertaining to prerequisites and credits. If there are updates to this document during the design and implementation of your project, you can continue to use the version that you started the project with OR you can elect to upgrade to the current version. Check with your Green Building Team Division representative for updates.

Scorecard Implementation Guide

Following is a description of the prerequisites and credits included on the Sustainable Infrastructure Scorecard. A copy of the scorecard is available in Appendix A.

You can also access this [guidelines](#) document and an electronic version of the [scorecard](#) at the GreenTools website.

Required Elements for a Sustainable Development Project

Because the scorecard is designed to apply to a wide variety of projects, many projects will not be able to meet all of the following prerequisites. For example, a project that does not have an energy component will not be able to reduce energy use by 10%. All prerequisites that don't apply to a particular project type should be marked "N/A"

Prerequisite 1: Hold an eco-charrette or similar planning meeting

Intent

To educate the team participants about environmental and green building practices, to create a common language to explore these issues, to begin the collaborative approach necessary for successful integrative design, and to establish sustainable goals for the project. When sustainable goals are established collectively and early in the design process at an eco-charrette or similar event, the opportunity to develop synergistic and cost-effective solutions are optimized.

Requirements

An eco-charrette is a facilitated meeting for a project design team that explores sustainable and high performance themes and strategies that can be applied to a project. To meet this prerequisite, hold an eco-charrette or similar planning meeting in the early phases of project planning -- pre-design, no later than conclusion of the schematic phase. Participants in the meeting must include all design team members and selected stakeholders. A brief report of the eco-charrette or similar meeting, including summaries of the presentations and discussions, will be used to document completion of this prerequisite.

Additional Guidance

The project may employ a consultant to conduct the eco-charrette (recommended for large or complex projects). For smaller projects the meeting may be led by the project manager or other staff member. Eco-charrettes should include as many project stakeholders as possible and should address all aspects of the project.

Implementation Examples

Central Maintenance Facility, DNRP's Parks & Recreation Division: Planning for a new Central Maintenance Facility got underway in 2008 by holding an eco-charrette. The project team set a goal to achieve a LEED Gold rating for the building.

Project Manager: Chris Erickson

Atlantic/Central Base Operations Building: Due in part to the 2006 Executive Order regarding renewable energy and efficiency goals, it was determined that the Atlantic/Central Base Operations

Building would seek a LEED Gold rating with an emphasis on energy efficiency. A series of LEED workshops were conducted with key transit staff to determine LEED strategies and to select suitable building systems to meet the Gold objectives.

Project Manager: Garrett Stronks

Factoria Recycling and Transfer Station: A new recycling and transfer station will replace the existing one onsite. The project team held an eco-charrette to gather information from all of the building's users.

Project Manager: Fred Bennett

South Park Bridge: Although the eco-charrette did not occur early in the design process, ideas that were discussed at the meeting were incorporated in the design. This project is not attempting a LEED certification.

Project Manager: Tim Lane

Implementation Resources

- The Department of Ecology website provides information about eco-charrette facilitation, <http://www.ecy.wa.gov/programs/swfa/greenbuilding/Charrettes.html>.
- The National Charrette Institute provides a wealth of resources and tools for charrette planning and facilitation, <http://www.charretteinstitute.org/>.

Prerequisite 2: Use Life Cycle Cost Assessment (LCCA)

Intent

Following best practice principles for life cycle cost analysis (LCCA) can help to improve the cost effectiveness of LEED and other sustainable projects. LCCA is beneficial because it addresses future costs associated with maintenance, operation and replacement of a building or capital project, in addition to the first costs of design and construction. The methodology can be applied to a wide variety of decisions, including accepting or rejecting options, design and sizing, location, replacement, lease or buy options, system interdependence, budget allocation, and priority or ranking methodologies. A countywide Resource Life Cycle Cost Analysis (rLCCA) tool is available, if your division does not have its own.

Requirements

To meet the prerequisite, projects must complete either the division's LCCA or if your division does not have one use the rLCCA. The LCCA/rLCCA report should be kept in the project file and be available for review.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- King County LCCA Guide. User guide designed to help King County Project Managers evaluate green building design options, https://www.kingcounty.gov/~media/depts/dnrrp/solid-waste/green-building/documents/KC_LCCA_calculator-guide.
- King County rLCCA Technical Resources. Includes the rLCCA tool download link, a rLCCA training document, <https://kingcounty.gov/depts/dnrrp/solid-waste/programs/green-building/county-green-building/technical-resources.aspx>.
- National Institute of Building Sciences, Whole Building Design Guide (Life-Cycle Costs Analysis), <http://www.wbdg.org/resources/life-cycle-cost-analysis-lcca>.

Prerequisite 3: Account and mitigate for greenhouse gas emissions

Intent

Mitigation of greenhouse gas (GHG) emissions is established King County policy, as highlighted by the 2010 King County Strategic Plan climate objective, the 2008 King County Comprehensive Plan, and the King County Strategic Climate Action Plan - which specifically directs agencies to reduce operational GHG emissions and to collaborate with others to reduce regional emissions to 80% below 2007 levels by 2050. An accounting of project emissions and implemented mitigation strategies will help provide a baseline and document progress towards emissions reduction targets. More information about King County policy related to assessing and mitigating greenhouse gas emissions is available on the King County [Climate Change Policy Webpage](#).

Requirements

Projects will complete an accounting of a project's main sources of lifecycle greenhouse gas emissions. Primary sources of emissions from most projects come from operational and transportation sources; however, some projects also generate emissions from construction, landscape disturbance, or use of materials. This prerequisite also requires estimates of the emissions reductions that result from mitigation actions - such as those resulting from meeting the Prerequisite 5 – Energy Reduction, as well as from achieving additional energy efficiency and alternative transportation credits. This prerequisite is also linked to existing County policy that all actions subject to the State Environmental Policy Act (SEPA) should account for GHG emissions in the environmental review process. Save a copy of your GHG analysis in your project file so it can be available for review.

Additional Guidance

Guidance for how to assess GHG emissions, as well as what mitigation options to consider, is provided below. Please note that many strategies outlined in the scorecard, such as reducing energy usage, use of sustainable materials, and use of alternative fuels, result in reduced GHG emissions and are related to the GHG assessment and mitigation prerequisite. Questions about this guidance can be directed to climatechange@kingcounty.gov.

Implementation Examples

None at this time.

Implementation Resources

- King County Greenhouse Gas (GHG) Emissions Calculator tool. This is an Excel spreadsheet that includes several different GHG emissions calculators to accommodate a variety of project types, <https://www.kingcounty.gov/~media/depts/dnrp/solid-waste/green-building/documents/emissions-calculator>.
- King County GHG Emissions Calculator and Mitigation Strategies Guidelines. This document provides explanation on how to use the GHG Emissions Calculator tool as well as serves as a resource for alternative options to mitigate and reduce greenhouse gas emissions, <https://kingcounty.gov/~media/depts/dnrp/solid-waste/green-building/documents/emissions-guidelines>.

Prerequisite 4: Implement erosion and sedimentation control best management practices

Intent

Protect and preserve wetlands, shorelines, buffers, and other critical areas by using erosion and sedimentation control to prevent stormwater runoff from disturbed areas during construction because of the ecosystem value these areas provide.

Requirements

Projects must implement best management practices for erosion and sediment control during construction. This prerequisite is identical to Washington State Code for creating and implementing a project-specific Temporary Erosion and Sedimentation Control Plan (TESC Plan).

Additional Guidance

None at this time.

Implementation Examples

Lower Tolt River Floodplain Reconnection Project: This project replaced a half-mile stretch of existing levee with a new one, located about 800 feet further back from the river channel. Because of its proximity to the river, extremely tight sedimentation and erosion controls were used.

Project Manager: Jon Hansen

Implementation Resources

- 1998 King County Surface Water Design Manual, Appendices C and D are available at the King County Water and Land Resources Division at 206-296-6519. Supporting documents and software can be downloaded at <http://www.kingcounty.gov/environment/waterandland/stormwater/documents/surface-water-design-manual.aspx>.
- "Stormwater Management: Environmentally Sound Approaches," Environmental Building News, Sept/Oct 1994. 802-257-7300 or www.buildinggreen.com.
- Stormwater Management For Construction Activities: Developing Pollution Prevention Plans And Best Management Practices: Summary Guidance. EPA#833-R-92-001, October 1992, EPA Office of Wastewater Management, 401 M St. SW, Mail Code EN-336, Washington DC, 20460. 800-245-6510, 202-260-7786 or www.epa.gov/npdes/pubs/owm0307.pdf.
- Stormwater Management Manual for Western Washington, Volume V, Runoff Treatment BMP's (Publication #9915). Washington State Department of Ecology, October 1999, Revised April 2005. Can be viewed online and you can request a copy at <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals> or call 360-407-7472 to request a copy.
- International Erosion Control Association (IECA) provides technical assistance and an annual Erosion Control Products and Services Directory. IECA's Western Chapter addresses issues that are unique to the Western U.S. Can be reached at 800-455-4322 or www.ieca.org.
- The Municipal Research and Services Center of Washington lists several resources on Erosion and Sediment control at www.mrsc.org/Subjects/Environment/water/SW-erosion.aspx.

Prerequisite 5: Reduce energy use by 10% over baseline

Intent

To support the county's energy planning goal to reduce energy use by 10% as of 2015. Reduced consumption benefits the County by reducing costs of operating buildings and other facilities over time. In the case of fossil fuel energy, reduced consumption has the added benefits of reducing global greenhouse emissions and protecting the County from volatile energy pricing.

Requirements

For new construction with conditioned space, or renovation projects that include major energy improvements, energy use must be reduced by at least 10% over the most stringent energy code in the county (credits are available on the scorecard for additional reductions). A copy of the Energy Performance Compliance Checklist, located in Appendix I should be completed and included in the project file.

Additional Guidance

This prerequisite is primarily applicable to those projects with conditioned space, such as buildings and facilities. Infrastructure projects may have opportunities to reduce energy use, through improved efficiencies in exterior lighting, pumps, or other process and industrial equipment. Projects without direct energy consuming equipment may consider opportunities to reduce indirect energy related with the project, such as minimizing vehicle impacts by providing amenities for public transportation, using alternative fuels during construction, or implementing on-site renewable energy to power nearby amenities, etc. See Planning and Designing for Sustainable Development Credit 4.0 and Construction Best Management Credit 3.0, and Reduce Energy Use and Promote the Use of Renewable Energy Credit 3.0.

Implementation Examples

Eastgate Public Health Direct Digital Control Heating, Ventilation, and Air Conditioning (HVAC) Upgrades: Upgrades to the direct digital control HVAC system will provide 15 percent more efficiency than the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) minimum.

Project Manager: Mike Lozano

Regional Justice Center Detention HVAC Improvements: This project upgraded all 24 existing air handling unit motors at the RJC Detention Building's inmate areas, with new, energy-saving motors with variable frequency drives. The new system will be at least 15 percent more energy efficient than the existing one.

Project Manager: Stephen Swinburne

Carnation Treatment Plant Administration Building: The Administration Building performs 33 percent better than ASHRAE 90.1 – 1999 requirements using the LEED Energy Cost Budget methodology.

Project Manager: Jeff Lundt

Implementation Resources

- Advanced Buildings, Technologies and Practices online resource presents energy-efficient technologies, strategies for commercial buildings, and pertinent case studies, <http://www.advancedbuildings.org>.
- American Council for an Energy-Efficient Economy (ACEEE) is a non-profit organization dedicated to advancing energy efficiency as a means of promoting economic prosperity, energy security, and environmental protection, <http://www.aceee.org>.

- ENERGY STAR, <http://www.energystar.gov/>.
- New Buildings Institute (NBI) is a non-profit organization working to improve energy performance of commercial buildings. Works collaboratively with commercial building market players to remove barriers to energy efficiency, including advocating for advanced design practices, improved technologies, public policies and programs that improve energy efficiency. Provides Advanced Buildings[™] tools and resources, <http://www.newbuildings.org>.
- The City of Seattle Department of Planning and Development website contains information about Commercial Incentives: <http://www.seattle.gov/dpd/permits/greenbuildingincentives/default.htm>.
- King County, Energy Performance Compliance Checklist, see Appendix I.

Prerequisite 6: Install water saving fixtures

Intent

To reduce indoor potable water use in county facilities, thereby reducing the burden on municipal water supply and wastewater systems. The use of low-flow fixtures is the most effective way to reduce potable water use in facilities.

Requirements

Projects that use potable water must install water saving fixtures to achieve a 20% reduction of building water use over the baseline for toilets, urinals, lavatory sinks, kitchen sinks, and showers. Install dual-flush, low-flow, or composting options for toilets, and waterless or low-flow urinals. Install new or upgrade lavatory sinks with touchless systems for faucets that include aerators. For this prerequisite, a low-flow fixture is defined as a fixture that has earned the EPA Water Sense label.

Additional Guidance

None at this time.

Implementation Examples

King County Correctional Facility Shower Replacement: Facilities Management Division (FMD) installed 92 high-efficiency shower valves, which earned the project \$180,000 in rebates from the City of Seattle at project completion in October 2007.

Project Manager: Stephen Swinburne

Black River Department of Development and Environmental Services (DDES) Building: FMD is installing high-efficiency faucets and flush valves to replace existing high volume fixtures.

Project Manager: Denise Thompson

Implementation Resources

- The Seattle Public Utilities Green Business Program website contains information about available water rebates and incentives, <http://www.seattle.gov/util/ForBusinesses/GreenYourBusiness/SaveWater/index.htm>.
- Saving Water Partnership is a group of local utilities that fund water conservation programs in Seattle and King County. The partnership offers financial incentives for installing water-efficient fixtures, appliances, and technologies, <https://www.savingwater.org/>.
- The International Association of Plumbing and Mechanical Officials (IAPMO) works with government and industry to implement comprehensive plumbing and mechanical systems, <http://www.iapmo.org>.
- The International Code Council (ICC) develops the International Codes, or I-Codes, a complete set of comprehensive, coordinated building safety and fire prevention codes, <http://www.iccsafe.org>.
- The Built Green rating system, an environmentally friendly residential building program of the Master Builders Association of King and Snohomish Counties, includes indoor and outdoor water conservation credits for its Green Communities, Multi-family, and Emerald Star certification checklists, <https://www.builtgreen.net/certification>.
- WaterWiser is a program of the American Water Works Association operated in cooperation with the U.S. Bureau of Reclamation. Their website provides information and resources including links for all aspects of outdoor and indoor water conservation, recycled water collection and reuse, irrigation, landscaping, and efficient fixtures and appliances, www.waterwiser.org.

- Plumbing Manufacturers Institute (PMI) is the national trade association of plumbing product manufacturers. Its member companies produce most of the nation's plumbing products, 847-884-9PMI (9764), www.pmihome.org.
- The American Water Works Association (AWWA) is an international nonprofit scientific and educational society dedicated to the improvement of drinking water quality and supply, Washington, DC, 202-628-8303 or www.awwa.org.
- Saving Water, Saving Dollars: Efficient Plumbing Products and the Protection of America's Waters by Edward Osann and John Young, April 1998, Washington, DC, Potomac Resources, Inc. Available from the American Council for an Energy Efficient Economy, 202-429-0063, http://www.researchgate.net/publication/236352808_Saving_water_saving_dollars_Efficient_plumbing_products_and_the_protection_of_Americas_waters.
- U.S. EPA , How to Conserve Water and Use it Effectively. This document provides guidance for commercial, industrial, and residential water users on saving water and reducing sewage volumes <http://water.epa.gov/polwaste/nps/chap3.cfm>.
- Water Sense is an EPA-sponsored partnership program that promotes water efficiency and enhances the market for water-efficient products, programs, and practices, <https://www.epa.gov/watersense>.
- Refer to LEED BD&C, p 165, to find baseline for water fixtures and p 175, 176 for resources.

Prerequisite 7: Implement Green Operations and Maintenance program, including a green cleaning program

Intent

To reduce health risks to custodial staff and building occupants, reduce cost, and increase occupant satisfaction. Green cleaning is a holistic approach to janitorial services. Green Cleaning takes into account the health, safety and the environmental risks of products and processes associated with cleaning, and balances this with maintenance needs. It involves the use of alternative products, application of the products in different ways, and evaluation and/or behavior shifts associated with how buildings are used to reduce risks, while maintaining a satisfactory level of cleanliness and disinfection.

Requirements

Customize and implement division-wide green cleaning policy to earn this prerequisite. For each project, written green cleaning procedures must be established. In addition, facility personnel must be trained in the procedures.

Additional Guidance

Consider regular ongoing maintenance and cleaning needs as well as periodic and restorative needs. The King County Green Operations and Maintenance Guidelines are available to assist project teams to develop programs suitable for the specific project type. The Guidelines document will be updated annually.

Implementation Examples

King Street Center: Achieved LEED-EB Credits EA 3.2 (Maintenance Contracts), EA 3.3 (Comprehensive Preventative Maintenance Program), IEQ 1 (Entryway), and IEQ 5.3 (High Volume Copying) , contributing to a Gold rating.

Property Manager: Francine Fielding, Wright Runstad

Ryerson Base Improvements: Earned an Innovation in Design credit under the LEED-NC rating system for implementing a green housekeeping plan.

Project Manager: Ron Moattar

Implementation Resources

- The King County Green Operations and Maintenance Guidelines are available to assist project teams in developing programs suitable for the particular project type. The guidelines include a policy template.
- Green Seal provides science-based environmental certification standards for green cleaning products, <http://www.greenseal.org>.

Prerequisite 8: Assess whether project site(s) contain or are likely to contain historic/archaeological resources.

Intent

To reduce the likelihood of having an adverse impact to potentially significant historic or archaeological sites. Adverse impacts to these resources can impact project costs and delay timelines. By evaluating all potential project locations, decisions about preferred locations can take into account the probability of uncovering historic or archaeological resources. The Historic Preservation Program (HPP) identifies and documents historic resources through field survey and research to produce a historic resource inventory (HRI). King County's HRI contains nearly 4,000 above-ground properties. In addition, data on 1300 archaeological sites and related resources are maintained in a digital database and in GIS layers.

Requirements

Obtain a review of any proposed project locations from HPP for the presence or likely presence of historical or archaeological resources. Have HPP assess the significance of the project to identified resources, and consider potential mitigation for adverse effects.

Additional Guidance

None at this time.

Implementation Examples

Documentation of historic timber road under West Snoqualmie Valley Road,
<https://keepingcommunitiesconnected.com/2017/01/12/road-crew-discovers-old-timber-road/>.

Implementation Resources

4Culture offers annual Preservation Special Projects grants that can be used for research, assessment, and documentation of identified historic resources, <https://www.4culture.org/grants/preservation-projects/>.

Planning and Designing for Sustainable Development

There are 8 possible points available under this category. Many of the decisions made during planning for the project affect the type and impact of sustainable development practices available to the project. Points available under this category award projects that use an integrative design process, incorporate green contract language and specifications, develop on brownfield sites, plan and design for alternative transportation as well as on-going project operations and maintenance, and include a number of construction efficiencies available through design, such as design for disassembly, using pre-fabricated components, and efficient construction delivery and staging.

PD Credit 1.0: Use an Integrative Design Process (1 point)

Intent

To achieve maximum building performance while achieving construction and operational savings. Integrative Design Process (IDP) is an effective way for creating cost effective, energy efficient, and environmentally responsible solutions that meet the specific needs of the intended users as well as the greater community. An integrative design approach takes into account interactions among all design variables and building systems and works with synergies and tradeoffs among them to arrive at the highest value for the project budget.

Requirements

One point may be achieved for projects that employ an IDP. To achieve this credit, the project team should establish IDP early in the process (pre-design or schematic design) with a project schedule that supports IDP. In addition, the team must agree to work in an iterative and multi-disciplinary fashion, testing assumptions and incorporating stakeholder feedback at multiple stages of the process i.e. conceptual design, design development, construction, and post-occupancy.

Additional Guidance

IDP is defined in the current ANSI Standard for Integrative Design presently entitled Whole Systems Integrated Process or WSIP. Improvements to this ANSI standard are in progress and will replace the current standard. As a national standard, the IDP ANSI Standard is intended to provide a common reference for all industry practitioners (owners, architects, builders, engineers, landscape architects, systems ecologists, manufacturers, and so on) in support of process changes needed to effectively realize cost savings, deepen understanding of human and environmental interrelationships, and improve the environment for all living systems.

Implementation Examples

Parks Department: Project Managers have taken Integrative Design Process Workshops.
Project Manager: Butch Lovelace

Factoria Recycling and Transfer Station: The project team for the Factoria RTS is using an integrative design process as they plan for the new station.
Project Manager: Fred Bennett

Implementation Resources

- The proposed new ANSI Standard, that will replace the present ANSI Standard entitled, Whole Systems Integrated Process (WSIP), is based on the book by Bill Reed, President of the Integrative Design Collaborative <http://www.integrativedesign.net/> and 7 Group

<http://www.sevengroup.com/> entitled the Integrative Design Guide to Green Building: Redefining the Practice of Sustainability
http://www.amazon.com/gp/product/0470181109/ref=pd_lpo_k2_dp_sr_1?pf_rd_p=304485901&pf_rd_s=lpo-top-stripe-1&pf_rd_t=201&pf_rd_i=0071546014&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=12ZN56M3CTMZ385AGKFJ.

- Better Bricks website provides information about the Integrative Design Process, <https://betterbricks.com/>.
- New Buildings Institute (NBI) website contains a section that addresses the whole-building design process, “Engage the Integrated Design Approach,” http://www.wbdg.org/design/engage_process.php.
- Fundamentals of Integrated Design for Sustainable Building by Marian Keeler and Bill Burke is written for a broad audience—design professionals, engineers, land-use planners, resource and waste managers, and government officials—to educate about the importance of integrated building design. Topics include design processes, green building legislation, energy use and standards, energy efficiency, and water quality, among others. Available at Wiley Publishing, Inc, <https://www.wiley.com/en-us/Fundamentals+of+Integrated+Design+for+Sustainable+Building-p-9780470152935>.

PD Credit 2.0: Use “green” contract language and specifications (1 point)

Intent

To facilitate clear communication among the client, design team, and contractor for the development and construction of a green building project.

Requirements

Projects that include language in bid, contract, and specification documents that call out green building strategies and techniques, and expertise in green building strategies such as low impact development and IDP may claim this credit. Additional credits address specific materials or strategies that are specified and used (see Sustainable Materials credits 1.0 – 8.0).

Additional Guidance

None at this time.

Implementation Examples

Facilities Management Division Specifications Boilerplate: The Facilities Management Division revised their standard specification boilerplate to include “green” specifications.

Contact: Jason Rich

Implementation Resources

- To address the need for a comprehensive guide for procuring green building products and construction/renovation services within the Federal government, EPA has partnered with the Federal Environmental Executive and the Whole Building Design Guide (WBDG) to develop the Federal Green Construction Guide for Specifiers, <http://www.wbdg.org/design/greenspec.php>.

PD Credit 3.0: Develop on brownfield sites (1 point)

Intent

Using brownfield sites both restores a polluted or damaged site and preserves existing open space for other uses. Cleaning up brownfield sites may also improve run-off quality and reduce negative impacts on surrounding eco-systems and water bodies.

Requirements

This credit may be claimed by projects that use a brownfield site. For the purpose of the credit a brownfield site is defined as a site that has been contaminated by previous development. Identify on-site contamination and document the remediation of the site.

Additional Guidance

The cost of mitigation varies, and should be based on a survey and sampling of potential pollutants.

Implementation Examples

Shoreline Recycling and Transfer Station: The new Shoreline RTS is partially built on a closed landfill. The landfill had to be excavated prior to construction of the building.

Project Manager: Lisa Williams

Implementation Resources

- King County Brownfields website, <http://your.kingcounty.gov/solidwaste/brownfields/index.asp>.
- Brownfields Technology Support Center is a public center that provides technical support to federal, state, and local officials on issues related to site investigation and cleanup, <http://www.brownfieldstsc.org>.
- Environmental Law Institute, Brownfields Center provides information on brownfields cleanup and redevelopment, <https://www.eli.org/brownfields-program/brownfields-center>.
- U.S. EPA, Sustainable Redevelopment of Brownfields Program is a comprehensive website on brownfields that includes projects, initiatives, tools, tax incentives, and other resources, <http://www.epa.gov/brownfields>.

PD Credit 4.0: Plan and design for alternative transportation (1 point)

Intent

Providing separate lanes for bicycles provides a safe, zero-emission alternative to driving. Additionally, providing a system of connected sidewalks and crosswalks strengthens pedestrian connectivity between the site and its surrounding community and promotes walking as a safe and healthy mode of travel. Furthermore, bike and pedestrian accommodations support commuters who use a combination of transportation modes such as walking/riding the bus or biking/riding the light rail to reach their destination.

Requirements

Projects that accommodate alternative modes of transportation, such as, biking, walking, “green” vehicles, carpooling, and mass transit may claim this credit.

Additional Guidance

This credit is immediately applicable for projects that are inherently transportation related (roads, paths, bridges, etc.) It is also applicable to any project that has public or employee access. Alternative transportation to the project site can be encouraged by looking at pedestrian and bike friendly ingress/egress, connections to nearby community amenities accessible by foot, designing linkages to public transit, offering preferred parking for carpoolers and “green” vehicles or discounts for alternative transportation. Safety enhancements such as plantings, railings and low fences provide visual and physical separation between roads/drives and multi-use trails/sidewalks and, in turn, encourage walking and biking. For projects near schools, coordinate with the school’s administrators to provide safe pedestrian and cyclist routes. At department facilities, add bike lockers or racks and consider adding shower/changing rooms.

Implementation Examples

Shoreline Recycling and Transfer Station: Achieved LEED Credit SS 4.1 and 4.2.

Project Manager: Lisa Williams

Ryerson Base Improvements: Achieved LEED NC Credit SS 4.3 by implementing alternative fuel refueling stations.

Project Manager: Ron Moattar

Implementation Resources

- Woodhull, J. 1992. How Alternative Forms of Development Can Reduce Traffic Congestion" Sustainable Cities; Concepts and Strategies for Eco-City Development, Ed. Bob Walter et al., Eco-Home Media, Los Angeles. Offers alternative approaches to traffic planning concentrating on "access" rather than mobility. Covers densification, parking, development patterns and offers solutions for pedestrian-friendly, transit-oriented development.
- U.S. EPA and Department of Transportation, Best Workplaces for Commuters. Program publicly recognizes employers who have exemplary commuter benefits programs. Provides tools, guidance, and promotions to help employers give commuter benefits, reap the financial gains, and achieve recognition, <http://www.bestworkplaces.org/about1/>.
- U.S. EPA, Office of Transportation and Air Quality provides information about the types and effects of air pollution associated with automobile use and links to resources for organizations interested in promoting commuter-choice programs, www.epa.gov/otaq.

- Commuting Guide for Employers outlines strategies for employers to encourage employees to commute by bicycle. Also includes quick facts sheets on commuting, urban planning and environmental statistics, as well as links to related sites, www.selfpropelledcity.com.
- Federal Highway Administration, Office of Human and Natural Environment, Bicycle & Pedestrian Program promotes access to and use and safety of bicycle and pedestrian traffic, https://www.fhwa.dot.gov/environment/bicycle_pedestrian/index.cfm.
- Pedestrian and Bicycle Information Center provides information and resources for issues related to bicycle commuting, www.bicyclinginfo.org.
- WalkScore ranks neighborhoods based on their walkability, <https://www.walkscore.com/>.

PD Credit 5.0: Plan and design for long-term maintenance (1 point)

Intent

Ensure that a project's maintenance needs are planned for during the design process, reducing the long term cost for maintenance as well as equipment replacement.

Requirements

To earn this credit, project teams must confer with representatives from the operations staff early on and throughout the design phase on the facility design and equipment selection. For historic buildings, development of a preservation plan can also earn the credit.

Additional Guidance

This consultation ensures proper maintenance can be performed over the life of a facility and increases the likelihood that selected equipment will be maintained. Development of a preservation plan for historic buildings and considering seismic retrofits is encouraged.

Implementation Examples

King Street Center: Achieved LEED EB EA Credit 3.2 for establishing Maintenance Contracts and EA Credit 3.3 for implementing a Comprehensive Preventative Maintenance Program.

Property Manager: Francine Fielding, Wright Runstad

Factoria Recycling and Transfer Station: Has involved operations and maintenance staff since the beginning of planning for the facility.

Project Manager: Fred Bennett

Implementation Resources

- The International Facility Management Association (IFMA) provides resources and tools on facility planning and on-going maintenance, <https://www.ifma.org/>
- 4Culture offers annual Preservation Special Projects grants that can be used for preparation of preservation plans, <https://www.4culture.org/grants/preservation-projects/>.

PD Credit 6.0: Design for Disassembly (1 point)

Intent

Design for disassembly (DfD) is a building design process that facilitates a longer life for a building and allows for the easy recovery of products, parts, and materials when a building is disassembled or undergoes renovation. The process is intended to maximize economic value and minimize environmental impacts through reuse, repair, remanufacture and recycling.

Requirements

Projects that incorporate key design principles that allow for disassembly at the end of the project's useful life may claim this credit.

Additional Guidance

Key design principles (summarized from Design for Disassembly in the Built Environment) include:

- Developing a deconstruction plan during the design/construction phase,
- Select materials that are durable and/or can be easily reused or recycled,
- Design connections that are accessible,
- Use bolted, screwed, and nailed connections,
- Separate mechanical, electrical and plumbing systems from the assemblies that host them,
- Design for the ease of removal/disassembly by standard mechanical equipment,
- Design for simplicity
- Design for interchangeability
- Design for safe deconstruction

Implementation Examples

None at this time.

Implementation Resources

- King County GreenTools website provides information about construction recycling including DfD, <https://kingcounty.gov/depts/dnrp/solid-waste/programs/green-building/construction-demolition.aspx>.
- Design for Disassembly in the Built Environment is a guide prepared for the City of Seattle, King County, and Resource Venture, <http://your.kingcounty.gov/solidwaste/greenbuilding/construction-recycling/disassembly.asp>.

PD Credit 7.0: Plan, design and build with pre-fabricated elements (1 point)

Intent

Pre-fabricated elements are made off-site in a controlled environment, where raw materials can be used more efficiently and waste can be easily recovered. This saves time and waste by minimizing the inefficiencies of on-site fabrication. Prefabricated elements may also increase the ease of disassembly.

Requirements

Projects that use pre-fabricated elements may claim this credit.

Additional Guidance

Specify elements that are easy to handle and assemble, and are delivered with minimal or no packaging.

Implementation Examples

None at this time.

Implementation Resources

- To learn more about structural insulated panels visit the Structural Insulated Panel Association website at <http://www.sips.org/>.
- ASTM-C902-09 specification covers the structural design and quality control of fabrication for load-bearing and non-load-bearing prefabricated masonry panels, <http://www.astm.org/Standards/C901.htm>.

PD Credit 8.0: Plan for efficient construction delivery and staging (1 point)

Intent

Efficient delivery and staging can significantly reduce the area of disturbance on a construction site, and can prevent materials damage and waste.

Requirements

Projects can claim this credit by creating and implementing a construction plan for efficient delivery and staging.

Additional Guidance

Maintain a minimal boundary around the area of work, not to exceed 40'. Coordinate material deliveries with the construction schedule to minimize on-site storage. Optimize paths for vehicles while minimizing site entry and exit points.

Implementation Examples

Bow Lake Recycling and Transfer Station: Excavation for the new station is underway while the old station is still in operation. This requires careful staging during construction.

Project Manager: Tom Creegan

Implementation Resources

- *Sustainable Construction: Green Building Design and Deliver, Second Edition* guides construction and design professionals through the process of developing commercial and institutional high-performance green buildings from design through construction, <https://www.wiley.com/en-us/Sustainable+Construction%3A+Green+Building+Design+and+Delivery%2C+4th+Edition-p-9781119055174>.

Construction Best Management

This category focuses on best practices to divert construction waste from the landfill, reduce transportation of construction materials, reduce carbon emissions resulting from operating construction equipment, improve indoor air quality for workers and building occupants, and reduce water used for cleaning and dust control. There are a total of 7 points possible in this category.

CM Credit 1.0: Recycle construction and demolition materials (up to 3 points)

Intent

To divert construction and demolition debris from disposal in landfills and incineration facilities. In addition, the intent is to redirect recyclable material back into the manufacturing process and reusable materials to second and appropriate use.

Requirements

To earn this credit, projects must specify and implement a construction waste management plan with a specified diversion rate. Projects can claim up to three points under this credit:

- CM credit 1.1 - 50% diversion rate = 1 point
- CM credit 1.2 - 75% diversion rate = 2 points
- CM credit 1.3 - 95% diversion rate = 3 points

In addition to addressing materials that can be recycled, the plan must address potential reuse, including opportunities to reuse building or site materials in the existing project or in new projects.

Additional Guidance

Seek qualified contractors that are experienced in construction and building removal materials diversion techniques. In King County, there should be no construction cost increase for recycling at least 75% of all construction and demolition (C&D) materials. Salvage of historic building materials such as wood siding, windows and doors, and structural members is encouraged.

Implementation Examples

Mt. Si Bridge: When the Mt. Si bridge was replaced, as much material as possible was recycled. 22,500 tons of steel and 250 cubic yards of concrete were recycled.

Project Manager: Gwyn Lewis

South Treatment Plant Administration Building: 445.44 tons or 94.78% of the construction waste was diverted from the landfill.

Project Manager: Jacquelynn Roswell

Brightwater Treatment Plant: In 2008, construction activities for the Brightwater Treatment Plant diverted 725 tons of debris from landfills and reused 280,000 tons of material, keeping 28,000 trucks off the roadways with an estimated round-trip distance of 25 miles per truck. In addition, 7,700 tons of fly ash was recycled in the 2008 construction efforts.

Project Manager: Michael Popiwny

Implementation Resources

- Construction Recycling Directory for Seattle/King County provides tools and assistance for construction, demolition and deconstruction projects including jobsite waste guidelines, waste management plan template, sample waste recycling specifications, directory of local construction waste recyclers and more. To learn more, contact King County's construction recycling program at (206) 296-4434 or go to their website <https://kingcounty.gov/depts/dnrp/solid-waste/programs/green-building/construction-demolition.aspx>.
- King County Solid Waste Division provides guidance for recycling construction and demolition waste, <http://your.kingcounty.gov/solidwaste/wdidw/category.asp?CatID=17>.
- King County Materials Resource Reuse Database contains a directory listing of businesses and organizations that accept unwanted items from residents and businesses in King County, Washington, for reuse, recycling or proper disposal, <http://your.kingcounty.gov/solidwaste/wdidw/materials.asp>.
- King County LinkUp is a program that works to expand markets for selected recyclable and reusable materials by facilitating an interactive community of businesses, public agencies and other organizations. Includes information on local carpet re-processing project being implemented jointly by SPU and the King County LinkUp Program, www.kingcounty.gov/linkup.
- Carpet America Recovery Effort (CARE) is a joint industry-government effort to increase the amount of recycling and reuse of post-consumer carpet and reduce the amount of waste carpet going to landfills. Provides information about carpet reclamation partners in your area, www.carpetrecovery.org.
- By-Product Synergy Northwest offers resource for assisting Washington companies to identify and implement “synergies” that allow one company’s waste to become another company’s resource, <http://pprc.org/index.php/2012/projects-2/projects/by-product-synergy-northwest/> Northwest Product Stewardship Council (NWPSC), <http://www.productstewardship.net>.

CM Credit 2.0: Use of on-site materials in construction (1 point)

Intent

To divert construction and demolition debris from disposal in landfills and incineration facilities. In addition, the intent is to redirect reusable materials to second and appropriate use.

Requirements

To earn this credit, projects must reuse 2.5% of building materials onsite.

Additional Guidance

Any onsite use of materials should be approved in advance, and should not compromise existing site amenities.

Implementation Examples

Lake Sammamish Master Trail – Redmond Segment: Renovation of the Lake Sammamish Master Trail in Redmond consisted of paving and widening a two-mile segment of the gravel trail. The project reused the existing gravel for widening the trail by 8 feet. 4,100 linear feet of split rail and 1,200 linear feet of chain link fence were reused.

Project Manager: Gina Auld

Water and Land Resources Division Coordinate Reduction of Waste (CROW) Program: The CROW program grinds up wood waste from projects and uses it as a soil amendment.

Project Manager: Leo Griffen

Lake Hills Interceptor & EBI 2 Rehabilitation: By using a new method to rehabilitate sewer pipes, water use during construction was reduced from 771,000 gallons to 3,800 gallons. The new method involves inserting a resin-impregnated fabric sock filled with hot water into the pipes. The hot water is circulated inside the sock until the sock cures and hardens into the new pipe. This project saved 767,200 gallons of water.

Project Manager: Crystal Fleet

Implementation Resources

- King County GreenTools Web page explains cost-saving salvage and deconstruction practices and provides local resources, <http://your.kingcounty.gov/solidwaste/greenbuilding/construction-recycling/deconstruction-salvage.asp>.

CM Credit 3.0: Use alternative fuels in construction equipment (1 point)

Intent

To reduce air pollution during construction operations due to the use of fossil fuels. When using bio-gas, the intent is also to reduce odor and greenhouse gas emissions to the extent bio-gas offsets the use of fossil fuel.

Requirements

To earn this credit, the project must specify and use alternative fuels in construction operating equipment.

Additional Guidance

Retrofit existing vehicles, or purchase new vehicles that accept bio-diesel, low-sulfur diesel or natural gas. Most current diesel vehicles are compatible with bio-diesel--some may need fuel filter or hose replacements. Bio-diesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. It may be purchased in different formulations, ranging from B-5 (5% bio-diesel + 95% diesel) to B-100 (100% bio-diesel). It can be used in compression-ignition (diesel) engines with little or no modifications.

In addition to the use of alternative fuels for daily construction operations, consider designating bio-diesel for backup energy rather than diesel, which may contribute to this credit.

Implementation Examples

None at this time.

Implementation Resources

- Clean Cities, Western Washington Clean Cities web page describes how alternative fuels are a valuable tool for reducing air pollution and greenhouse gases, protecting public health, and contributing to economic development and provides resources, web links, and local success stories, <http://www.cleancities.org/>.

CM Credit 4.0: Implement indoor air quality construction management plan (1 point)

Intent

An indoor air quality construction management plan can help to ensure the comfort and well-being of construction workers and building occupants.

Requirements

To earn this credit, a project must specify and implement an indoor air quality construction management plan. The plan must describe methods to limit pollution sources, protect equipment and avoid contaminants during construction, as well as describe the means that will be used to monitor compliance.

Additional Guidance

Consider the inherent fresh air qualities of historic buildings, including operable windows that provide cross-ventilation, and tall ceilings that encourage the chimney effect of ventilation.

Implementation Examples

South Treatment Plant New Administration Building: Achieved LEED IEQ 3.1 and 3.3.

Project Manager: Jacquelynn Roswell

Shoreline Recycling and Transfer Station: Achieved LEED IEQ 3.1 and 3.3.

Project Manager: Lisa Williams

Implementation Resources

- Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995.
<http://www.smacna.org/technical/index.cfm?fuseaction=papers>.
- “Construction IAQ Management: Job-site Strategies for Ensuring a Healthy Building,” Environmental Building News, Vol. 11 No 5, May 2002. Provides a checklist based on the SMACNA guide, <http://www.buildinggreen.com/articles/IssueTOC.cfm?Volume=11&Issue=5>.
- National Park Service Preservation Brief No. 24: Heating, Ventilating, and Cooling Historic Buildings—Problems and Recommended Approaches, <https://www.nps.gov/tps/how-to-preserve/briefs/24-heat-vent-cool.htm>.

CM Credit 5.0: Reduce water use for cleaning and dust control (1 point)

Intent

To limit or eliminate the use of potable water for cleaning and dust control, reducing the burden on municipal water supplies.

Requirements

To earn this credit, a project must specify and implement a plan to minimize water use for cleaning and dust control. The plan must describe methods that will be used on the site, and how these methods will be monitored.

Additional Guidance

Cover construction entrances or heavy traffic areas with rocks, crushed debris or blankets. This will minimize dust and dirt transfer, thus reducing the need for vehicle cleaning. When vehicle washing is necessary, it should be done in a station that uses a water reclamation system, such as those found in commercial car washes.

Implementation Examples

Shoreline Recycling and Transfer Station: This project implemented a system for harvesting rainwater for dust control and other uses.

Project Manager: Lisa Williams

Implementation Resources

- None at this time.

Preserve and Maintain Natural Site Amenities

This category has a total 8 points possible. It focuses on minimizing disturbance to the existing site, maintaining or enhancing the existing vegetation and soils, and preserving or creating wildlife corridors and habitat. Credits are also available in this category for reduction of light pollution from the project, for integrating vegetation through green roofs and covers, and for designing natural acoustic buffers.

SA Credit 1.0: Minimize development footprint (1 point)

Intent

Reducing the footprint of any project is the most effective way to minimize habitat disturbance.

Requirements

Projects that use a minimal footprint may claim this credit.

Additional Guidance

Design facilities with compact footprints, focusing on multi-story construction. Projects should size right-of-way corridors appropriately based on traffic loads, with minimal disturbance of adjacent land.

Implementation Examples

Marymoor Maintenance Facility: The facility is sited near a wetland in Marymoor Park. It was designed to minimize the footprint of the buildings and the area needed for the maintenance activities.

Project Manager: John McCarthy

Implementation Resources

- The Puget Sound Regional Council website contains information about density bonus programs and incentives. Resource examples from jurisdictions in King County are included from the cities of Seattle and Bellevue, <https://www.psrc.org/>.

SA Credit 2.0: Preserve existing native vegetation (1 point)

Intent

Trees and other dominant native plant species are important to local ecology, providing food and shelter to numerous species. Homogeneous plant material, such as turf grass, creates a monoculture that requires treatment and maintenance, and is vulnerable to insects, weeds and disease. Using a diversity of native plants emulates natural conditions, creates a natural defense against many pests, limits excessive growth, and reduces the need for weeding or maintenance.

Requirements

Projects that protect and preserve existing native vegetation may claim this credit.

Additional Guidance

Inventory existing vegetation and plan to remove as little native vegetation as possible. If removal is necessary, relocate to a nearby location. During construction, maintain a barrier around the base of trees and other plants to protect root systems. Retain existing vegetation that is part of an identified historic landscape, even if non-native, or replace with compatibly sized and shaped native species.

Implementation Examples

West Point Digester Improvements: The West Point Digester Improvements project used trenchless methods such as microtunneling to avoid impacts to streams and wetlands in the project corridor.

Project Manager: Chris Okuda

District Court Southwest Landscaping: A new landscape design will increase the use of drought-tolerant plant species and maintain mature trees and plantings on-site.

Project Manager: Mike Lozano

Carnation Treatment Plant: The Plant is using an innovative treatment process (Membrane Bioreactors, or MBRs) to reclaim water to Class A level that is then being used enhance wetlands at the Chinook Bend Natural Area. The project is also designed so that the discharge pipe is located on the underside of the Carnation Farm Road Bridge instead of a trench in the riverbed, reducing construction impacts of the project. The 59-acre property is owned by King County and managed as an open space and habitat protection area by WLRD.

Project Manager: Jeff Lundt

Implementation Resources

- "Green Seattle Partnership 20-Year Strategic Plan" describes the current problems within Seattle's forested parklands, along with solutions and how it will be implemented, <http://greenseattle.org/20-year-strategic-plan>.
- Building Greener Neighborhoods: Trees as Part of the Plan (see Chapter 5: "The Construction Process"). Available from NAHB. 800-223-2665 or www.builderbooks.com.
- Pacific Northwest Chapter, International Society of Arboriculture, provides a list of certified arborists in Washington counties, <http://www.pnwisa.org/>.
- National Park Service Preservation Brief No. 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes, <https://www.nps.gov/tps/how-to-preserve/briefs/36-cultural-landscapes.htm>.

SA Credit 3.0: Retain or create open space and corridors (1 point)

Intent

As development increases in the County, preserving connections between habitat zones – particularly river corridors and wetlands- becomes more important.

Requirements

Projects that retain or create open space and corridors may claim this credit. Maintain a 100' no-build buffer zone around all sensitive areas, and do not build within the 100-year flood plain. In places where habitat was previously impacted, include remediation in project scope.

Additional Guidance

Design opportunities for wildlife to cross major transportation corridors without interfering with traffic. Coordinate crossings with natural corridors and hydrological flows to preserve existing migration paths.

Implementation Examples

Brightwater North Mitigation Area: This project restored approximately 1,350 feet of stream corridor and added an additional 350 feet of new stream corridor. It also created 29,000 square feet of pond habitat with an amphibian shelf and ladder that connects two open wetland systems, and constructed more than four acres of additional enhanced emergent and forested wetland habitat.

Project Manager: Michael Popiwny

Carnation Treatment Plant: The Plant reclaims secondary treated wastewater using Membrane Bioreactors (MBRs). MBRs produce Class A reclaimed water that is 10 times cleaner than typical reclaimed water. This non-potable reclaimed water is being used to enhance wetlands at the Chinook Bend Natural Area. The project is also designed so that the discharge pipe is located on the underside of the Carnation Farm Road Bridge instead of a trench in the riverbed, reducing construction impacts of the project. The 59-acre property is owned by King County and managed as an open space and habitat protection area by WLRD.

Project Manager: Jeff Lundt

Implementation Resources

- "Green Seattle Partnership 20-Year Strategic Plan", <http://greenseattle.org/20-year-strategic-plan>.
- Open Space Seattle 2100 is the collective effort of citizens from civic, environmental, business, neighborhood and community groups joined with the University of Washington to create a 100-year plan for Seattle's open spaces, <http://depts.washington.edu/open2100/>.

SA Credit 4.0: Reuse native soils on-site (1 point)

Intent

The reuse of native soils on-site reduces transportation trips from hauling purchased imported soil and disposing of excavated soil.

Requirements

Projects that reuse native soil on-site may claim this credit.

Additional Guidance

While reuse may require testing the native soil for gradation and performance, the overall cost will likely be less because you will not need to purchase imported soil or pay for the disposal of excavated soil. Amend native soil if necessary. Plan the grading design of your site to balance cut and fill on location. Follow the King County Post Construction Soil Standards.

Implementation Examples

White Center Field Upgrade: This field regrading was accomplished without exporting any soil from the site.

Project Manager: Jason Rich

Burke Gilman Trail Improvements: Approximately 1,290 cubic yards of the existing asphalt was recycled, and the existing subgrade gravel and fill will be reused when possible.

Project Manager: Gina Ault

Brightwater Treatment Plant: This project retained excavated soil on-site to significantly reduce truck trips, and using the excavated soil to create landforms and buffers that will attractively screen the facility's buildings.

Project Manager: Michael Popiwny

Lower Tolt River Floodplain Reconnection Project: This project replaced a half-mile stretch of existing levee with a new one, located about 800 feet further back from the river channel. The project reclaimed/reused about 4000 cubic yards of soil onsite.

Project Manager: Jon Hansen

Implementation Resources

- King County Post Construction Soil Standard:
<http://your.kingcounty.gov/solidwaste/greenbuilding/site/soil-standard.asp>.

SA Credit 5.0: Use light-colored exterior surface treatments – roof and non-roof (1 point)

Intent

The intent of this credit is to reduce the “heat island” effect, where heavily paved areas re-radiate heat and can raise local temperatures up to 10 degrees above ambient.

Requirements

Projects that specify and use light colored surface materials may claim this credit.

Additional Guidance

Reduce the “heat island” effect by specifying light-colored surfaces such as concrete, gravel or stone for non-roof surfaces. These materials absorb less heat from the sun than darker surfaces such as asphalt. For roofs, specify light colored roof membrane materials. For historic buildings, light colored roof membrane materials are appropriate for those where the roof is not visible to the public, but if the roof is a prominent feature of the historic building, consider materials that are more appropriate to the building’s historic character.

Implementation Examples

South Treatment Plant Administration Building: This project achieved LEED SS 7.1 and 7.2.

Project Manager: Jacquelynn Roswell

Implementation Resources

- Lawrence Berkeley National Laboratory website contains a section on heat island research and resources, <http://heatisland.lbl.gov/>.
- U.S. EPA website contains basic information about heat island effect, including strategies to minimize its impact, <http://www.epa.gov/heatisland>.

SA Credit 6.o: Integrate vegetated roofs and green areas (1 point)

Intent

Natural cover on horizontal surfaces helps to reduce temperatures, maintain air moisture levels, and provide natural air and stormwater filtration.

Requirements

Projects that integrate vegetated roofs and/or green (vegetated) areas may claim this credit.

Additional Guidance

Integrate vegetation into overpasses or medians, using plants that have tolerance to vehicle exhaust. Install greenroofs on facilities to improve energy performance and mitigate stormwater runoff.

Implementation Examples

Dexter Regulator Station: King County installed the green roof in 2002 to capture and retain stormwater runoff, reduce "heat island" effects, and provide wildlife habitat in an urban area,

<http://www.kingcounty.gov/environment/wtd/Construction/EnhanceEnvironment/GreenBuilding.aspx>.

Project Manager: Susan Michaud

Skyway Park Shelter: This project completed by the Parks and Recreation Division and students from the University of Washington restored about a half-acre of wetlands as well as designed and built a shelter and plaza. The shelter had a green roof designed to accept pre-planted trays of sedums. The trays were planted and grown off-site, and the plants were fairly mature when installed on the roof.

Project Manager: Butch Lovelace

Implementation Resources

- *Green Roof Feasibility Review for the King County Office Project* provides an overview to green roofs including a description of types of green roofs, a summary of cost and benefits and a review of eleven green roof projects in the Pacific Northwest Region, https://www.kingcounty.gov/~media/depts/dnrp/solid-waste/green-building/documents/KC_Green_Roof_case-study.ashx?la=en.
- Green Roofs for Healthy Cities, <http://www.greenroofs.org/>.
- World Changing, Green Roofs: the Urban Jungle's Upper Canopy, <http://www.worldchanging.com/archives/010211.html>.

SA Credit 7.0: Design lighting for reduced light pollution (1 point)

Intent

Reduce light pollution to limit development impacts on nocturnal ecosystems, preserve visual access to the night sky, and reduce energy costs through efficient lighting design.

Requirements

Projects that design exterior lighting so that light is not cast outside of the project boundary and up lighting is minimized or eliminated may claim this credit.

Additional Guidance

Projects should install full cut-off fixtures and use low-wattage lamps where possible. Use timers and daylight sensors to minimize light use.

Implementation Examples

South Treatment Plant Administration Building: This project achieved LEED SS 7.1 and 7.2.
Project Manager: Jacquelynn Roswell

King Street Center: This project achieved LEED SS 7.2.
Property Manager: Francine Fielding, Wright Runstad

Implementation Resources

- International Dark-Sky Association provides education and solutions to light pollution, www.darksky.org.
- LEED BD+C, SS credit 8, Light Pollution Reduction, pgs. 129-142.

SA Credit 8.0: Design natural acoustic buffers (1 point)

Intent

Support the psychological and physical wellbeing offered by human and animal habitats by limiting acoustic disruption with natural barriers.

Requirements

Projects that use natural acoustic barriers may claim this credit.

Additional Guidance

Where feasible, entrench roads to reduce noise. Target a 200' buffer zone between major roads and residential areas. Rather than walls, projects should use earth berms or dense vegetation between roads and sensitive areas. Barriers should be sized to provide appropriate acoustic "shadow".

Implementation Examples

SE 304th Street at 124th Avenue SE in Auburn: The project team chose to replace an existing signalized intersection with a single-lane roundabout. Roundabouts provide a variety of environmental benefits: they decrease greenhouse gas emissions by decreasing the amount of time cars idle at the intersection, decrease noise by eliminating the need for cars to stop and then accelerate, and decrease energy use by eliminating the need for an electronic signal.

Project Manager: Don Bleasdale

Implementation Resources

- Federal Highway Administration has a web page devoted to highway traffic noise and natural noise attenuation solutions, <https://www.fhwa.dot.gov/environment/noise/index.cfm>.

Equity and Social Justice

These credits identify and account for equity and social justice practices and outcomes throughout the capital project development lifecycle. They recognize project team efforts to advance process, distributional, and cross-generational equity. Initiatives and practices in this section support implementation of King County Equity and Social Justice Policy and Strategic Plan. This section describes the 9 Equity and Social Justice actions that are worth up to 26 credits.

ESJ Credit 1.0 Develop a project-specific ESJ plan (2 points)

- 1) **Develop a project-specific ESJ plan** – based on assessment of ESJ conditions and info gathered on priorities of stakeholders and existing and/or potential users (project-specific ESJ plan or substantive ESJ guidance is included in project charter– **up to 2 pts**)

Intent

That each capital project team is guided by explicit, context-sensitive, transparent, and accountable objectives for equity and social justice characteristics and outcomes through the project development lifecycle.

Requirements

Publicly accessible documentation of equity and social justice objectives that are calibrated to the project scope, sensitive to project context, and clear about the process, distributional, and/or cross-generational equity intent.

- ESJ Credit 1.1 – Project-specific ESJ Plan includes strategies to address at least 3 ESJ determinants or at least 3 ESJ credits
- ESJ Credit 1.2 – Project-specific ESJ Plan includes strategies to address at least 6 ESJ determinants or at least 6 ESJ credits

Implementation Examples

South Park Bridge

Georgetown CSO

Transit Battery Bus Route Operations

Parks Maintenance Facility

Implementation Resources

- Building Equity and Opportunity Infographic with Determinants of Equity
- PSB ESJ Business Planning Guide
- Bay Area Water Sewer District San Francisco Water Utility

ESJ Credit 2.0 Stakeholder partnering and collaboration (2 points)

- 2) **Stakeholder partnering and collaboration** – Priority-population active participation in siting, design and/or programming, via community organization partnerships, multi-faceted outreach, and approaches to pro-equity involvement, and/or participatory budgeting. (Substantive priority and/or non-traditional perspectives included – **up to 2 pts**)

Intent

That the voices, perspectives, and interests that are considered, heard, attended to, and partnered with throughout the project life-cycle are beyond the norm, and include historically or currently marginalized stakeholders.

Requirements

Formal documentation or non-formal memorializing of partnering and collaborative activity that demonstrates the above and beyond efforts to enlist, engage, and collaborate with non-traditional stakeholders.

- ESJ credit 2.1 – Project practices and implements level of engagement at “County informs”, “County consults” and “County engages in dialogue” levels.
- ESJ credit 2.2 – Project practices and implements level of engagement at “County and Community work together” and “Community directs action” levels.

Implementation Examples

Meridian Center for Health, Neighborcare Health, Public Health Seattle King County, Facilities Management Division, NBBJ, City of Seattle. Resulted in expanded services for under insured residents and lowered construction costs.

South Park Bridge, Road Services Division, Environmental Coalition of South Seattle, Historic Preservation Program, 4Culture

Bethaday Community Learning Center, Technical Access Foundation, Parks and Recreation Division, White Center CDA

Riverbend Levee Setback and Floodplain Restoration Projects, WLRD, Muckleshoot Tribe, neighborhood residents, recreational users, City of Renton

Northgate TOD RFP

Implementation Resources

- Community Engagement Guide, <https://www.kingcounty.gov/~media/elected/executive/equity-social-justice/documents/CommunityEngagementGuideContinuum2011.ashx?la=en>.

ESJ Credit 3.0 Assemble exemplary diversity in project and design teams (2 points)

- 3) Assemble exemplary diversity in project and design** teams that guide pro-equity development and build capacity among priority populations, consultants, and in-house staff (non-traditional perspectives included – **up to 2 pts**)

Intent

That the composition of the project and design teams account for economic justice intent and include diverse perspectives and life experiences to inform development approaches that are pro-equity in approach and affect.

Requirements

Document or demonstrate that consultants and in-house team members involved in the design and development processes transcend mainstream perspectives and experiences through gender, racial, and other diversities.

- ESJ credit 3.1 – Including ESJ expertise or partnership on project team
- ESJ credit 3.2 – Allowing ESJ stakeholder to have decision making role in project development

Implementation Examples

Northgate TOD RFP

ZE/LBC project RFPs

Project examples with internal KC project staff diversity

Hope VI projects – Seattle Yesler Redevelopment, Othello Station, Columbia City, Rainier Vista, High Point, KCHA White Center Greenbridge Seola Gardens

Implementation Resources

- RFP language

ESJ Credit 4.0 Conduct equity impact review processes (2 points)

- 4) **Conduct equity impact review processes** – to inform likely equity and social justice effects of siting, design and/or construction alternatives (EIR is public and accessible – **up to 2 pts**)

Intent

That equity impacts of project siting, design, and development alternatives are rigorously and holistically considered and advanced throughout the project lifecycle, using a standard, replicable, comparable process established by the King County Equity Impact Review process.

Requirements

Document at least the first 3 steps of the EIR process –

- ESJ credit 4.1 – Scope to identify who will be affected, 2) assess equity and community context, 3) conduct equity analysis that feeds into the decision process (for siting, design, and/or construction approaches)
- ESJ credit 4.2 – Use information from EIR to make pro-equity project decisions

Implementation Examples

Solid Waste Division South County Recycling and Transfer Station Siting EIR

Parks Regional Trails Network Capital Budget EIR

Battery Bus Infrastructure

Lower Duwamish Clean Up Record EIR

Implementation Resources

- Review the EIR process and view examples of using the EIR tool.
 - https://www.kingcounty.gov/~media/elected/executive/equity-social-justice/2016/The_Equity_Impact_Review_checklist_Mar2016.ashx?la=en.
 - <https://www.kingcounty.gov/~media/elected/executive/equity-social-justice/documents/KingCountyEIRToolExamples.ashx?la=en>.
- Building Equity and Opportunity Infographic with Determinants of Equity
 - https://www.kingcounty.gov/elected/executive/~media/elected/executive/equity-social-justice/2015/2015ESJinfographic_pagesLTR_print_booklet.ashx?la=en.

ESJ Credit 5.0 Site, design, and construct to counter known disparities in conditions (4 points)

- 5) **Site, design, and construct to counter known disparities in conditions** – enhance access to determinants through project characteristics and development model (demonstration of pro-equity effect – **up to 4 pts**)

Intent

That siting, design and construction approaches are actively pro-equity in their affect, such that identified disparities, inequities, and gaps in determinants of equity are remediated/corrected by development approaches in siting, design, and construction.

Requirements

Document or demonstrate that project planning, siting, design, and/or construction occurred via an approach that countered, remediated, and/or corrected inequities in community conditions, health outcomes, or related determinants.

- ESJ Credit 5.1 – Document or demonstrate 2 efforts
- ESJ Credit 5.2 – Document or demonstrate 4 efforts
- ESJ Credit 5.3 – Document or demonstrate 6 efforts
- ESJ Credit 5.4 – Document or demonstrate 8 efforts

Implementation Examples

South County Recycling and Transfer Station

98th Street Pedestrian Connection

NE Novelty Hill Road

Georgetown CSO

South Kirkland Park and Ride

Battery Bus Corridor Bus Selection

Implementation Resources

- Building Equity and Opportunity Infographic with Determinants of Equity, https://www.kingcounty.gov/elected/executive/~~/media/elected/executive/equity-social-justice/2015/2015ESJinfographic_pagesLTR_print_booklet.ashx?la=en.

ESJ Credit 6.0 Realize priority elements of project’s ESJ plan (4 points)

- 6) **Realize priority elements of project’s ESJ plan** – including process equity innovations, partnerships, features driven by those with the greatest need (validate plan accomplishments – **up to 4 pts**)

Intent

That the project team is able to manifest and make real the objectives for equity and social justice outcomes that were identified in the project plan.

Requirements

Document or demonstrate that equity and social objectives outlined in the project plan have been accomplished in the how the project was planned, designed, and/or constructed.

- ESJ Credit 6.1 – Document or demonstrate 2 efforts
- ESJ Credit 6.2 – Document or demonstrate 4 efforts
- ESJ Credit 6.3 – Document or demonstrate 6 efforts
- ESJ Credit 6.4 – Document or demonstrate 8 efforts

Implementation Examples

Sunset Heathfield Pump Stations

98th Street Pedestrian Connection

Bow Lake Recycling and Transfer Station

Metro Transit Zone Improvement Program

Implementation Resources

- Building Equity and Opportunity Infographic with Determinants of Equity, https://www.kingcounty.gov/elected/executive/~//media/elected/executive/equity-social-justice/2015/2015ESJinfographic_pagesLTR_print_booklet.ashx?la=en.

ESJ Credit 7.0 Advance economic justice (3 point)

- 7) **Advance economic justice** via Priority Hire, Project Labor Agreement, SCS, SOAW, apprenticeships, and selecting contracts to advance socially just enterprises, and partner with companies and community-based organizations that advance economic justice (gradient based on % beyond requirements – **up to 3 points**)

Intent

To ensure that spending throughout the capital development lifecycle (planning, design, and construction) advances economic justice by employing and building skills and readiness for those who needs for economic engagement are the greatest.

Requirements

Document or demonstrate that required economic justice activities and approaches are exceeded

- ESJ Credit 7.1 – achieves apprenticeship and SCS requirements for planning, design, and construction contracting through priority contracted hires and apprentices (by cost per phase)
- ESJ Credit 7.2 – for sourcing 1-3% above requirements for planning, design, and construction contracting through priority contracted hires and apprentices (by cost per phase)
- ESJ Credit 7.3 -- for sourcing 4-6% above requirements for planning, design, and construction contracting through priority contracted hires and apprentices (by cost per phase)

Implementation Examples

Factoria Recycling and Transfer Station – Apprenticeship and SCS firms

Sunset Healthfield Pump Stations – Priority Hire

Georgetown Wet Weather Station – Priority Hire

Implementation Resources

- King County Priority Hire Program, <https://www.kingcounty.gov/depts/finance-business-operations/business-development-contract-compliance/programs/PriorityHire.aspx>.
- King County Apprenticeship Program, <https://www.kingcounty.gov/depts/finance-business-operations/business-development-contract-compliance/programs/apprenticeship.aspx>.
- Small Contractors and Suppliers (SCS) Directory, <https://blue.kingcounty.gov/EXEC/contractreporting/Public/SCS/default.aspx>.

ESJ Credit 8.0 Pro-equity sourcing (3 points)

- 8) **Pro-equity sourcing** – select site and building materials, equipment, and systems which have pro-equity upstream and supply chain effects (e.g. local suppliers). (based on % beyond requirements – up to 3 points)

Intent

To ensure that sourcing of material, equipment and systems that are integrated into capital projects help realize and advance the equity and social justice intent of King County capital development efforts. Use of Environmental Preferable Purchasing products, third party certified products, building products disclosure and optimization, environmental products declarations, and sourcing a materials.

Requirements

Document or demonstrate that sourcing decisions (for material, equipment, and/or systems) prioritize equity and social justice outcomes upstream through the supply chain.

- ESJ Credit 8.1 – for sourcing 10% of project materials or equip/systems (by cost) through exemplary pro-equity suppliers
- ESJ Credit 8.2 – for sourcing-11-20% of project materials or equip/systems (by cost), through exemplary pro-equity suppliers
- ESJ Credit 8.3 -- for sourcing more than 20% of project materials or equip/systems (by cost), through exemplary pro-equity suppliers

Implementation Examples

Bow Lake Recycling and Transfer Station, more than 90% of wood is FSC certified

Children and Family Justice Center, Red List Free materials in specifications

Implementation Resources

- King County Environmental Purchasing Program, <https://www.kingcounty.gov/depts/finance-business-operations/procurement/for-government/environmental-purchasing.aspx>.
- Health Product Declaration® (HPD) Collaborative Public Repository database, <https://www.hpd-collaborative.org/hpd-public-repository/>.
- Declare materials and products database, <https://living-future.org/declare/>.
- Ecomedes database, <https://fulcrum.ecomedes.com/>.

ESJ Credit 9.0 Innovation credits (4 points)

9) Innovation credits (exemplary practices, processes, or outcomes at any phase of the capital project lifecycle – **up to 4 points**)

Intent

To advance best and exemplary practice in equitable development by innovating new approaches, techniques, and methods for achieving pro-equity planning, design, and construction.

Requirements

Document or demonstrate novel, innovative, and/or highly successful approach to pro-equity development, preferable in a case study format that fosters replication of proof of concept.

- ESJ Credit 9.1 – Document or demonstrate an innovative strategy that isn't identify in previous credits
- ESJ Credit 9.2 – Document or demonstrate an innovative strategy that isn't identify in previous credits
- ESJ Credit 9.3 – Document or demonstrate an innovative strategy that isn't identify in previous credits
- ESJ Credit 9.4 – Document or demonstrate an innovative strategy that isn't identify in previous credits

Implementation Examples

Examples to be added in future

Implementation Resources

Resources to be added in future from new innovative examples

Reduce Energy Use and Promote the Use of Renewable Energy

This category has a total of 15 possible points. It awards points for energy efficiency, for using efficient lamps, fixtures and motion-sensitive equipment, for installing on-site renewable energy, for using efficient appliances and equipment, for using a commissioning process during design and on an ongoing basis, power monitoring and submetering, for applying for utility rebates, and for eliminating the use of fossil fuels on site

EN Credit 1.0: Use LED lighting and occupancy/daylighting controls throughout facility (1 point)

Intent

To reduce energy used for lighting. Even in the Northwest, where hydropower has been a popular form of electricity production, more and more electricity is generated by fossil fuel (natural gas and coal). Thus, reducing electricity use for lighting can result in reduced greenhouse emissions. Reducing electrical requirements can also decrease utility generation, transmission, and distribution requirements, resulting in a reduced demand for new infrastructure with its associated development impacts.

Lighting systems affect occupant productivity and well-being, contribute to a space's aesthetics, place a major load on your cooling system, and consume lots of electrical energy – approximately 37% of a building's energy use. Widespread use of efficient lighting would reduce the nation's demand for electricity by more than 10%, resulting in significant savings in ratepayer bills and pollution reduction from power plants. A well-designed lighting plan – one that balances the source, distribution, and controls – is an important strategy for optimizing energy use to save on electric costs and create a comfortable work environment.

Requirements

Projects using LED light fixtures, photocells and/or motion sensor switches may claim this credit.

Additional Guidance

Use photocells to turn lights on and off depending on daylight availability and seasonal variance. Consider turning primary exterior lights off at curfew hours, providing only for safety lighting. Control lighting levels with occupancy sensors by reducing light level or switching lights off after a period of sensed vacancy (typically 15 or 30 minutes), depending on the space usage.

Implementation Examples

Houghton Transfer Station Mitigation and Roof Replacement: To reduce energy consumption, timer controlled lighting is being installed.

Project Manager: Francis Gaspay

Implementation Resources

BetterBricks contains a section under "Tools & Resources" that addresses lighting and thermal comfort controls, <http://betterbricks.com/DetailPage.aspx?ID=707>.

EN Credit 2.0: Reduce energy use from 10%-30% (up to 3 points)

Intent

To support the county's energy planning goal to reduce energy use by 10% from the 2015 code baseline. Reduced consumption benefits the County by reducing costs of operating buildings and other facilities over time. In the case of fossil fuel energy, reduced consumption has the added benefits of reducing global greenhouse emissions and protecting the County from volatile energy pricing.

Requirements

Projects that used strategies to reduce energy consumption and that are at least 10% more efficient than the baseline may earn this credit. The more energy efficient the project is, the more points may be earned (up to 3 points):

- EN credit 2.1 - 10% reduction beyond baseline = 1 points
- EN credit 2.2 - 20% reduction beyond baseline = 2 points
- EN credit 2.3 - 30% reduction beyond baseline = 3 points

Additional Guidance

The baseline will be the most stringent currently applicable energy code in King County, unless an alternate baseline is approved by the division energy manager. For an equipment or system replacement, for example, the energy savings may be compared to a baseline representing existing equipment consumption. For projects located outside of the city of Seattle, refer to Appendix I, the Energy Performance Compliance Checklist.

Consider all opportunities for energy reduction, including energy recovery, and consider the part load operating performance of equipment when making design decisions.

For projects involving historic buildings, consider completing a daylighting or energy efficiency study to demonstrate the often inherent qualities of passive daylighting and/or ventilation.

Implementation Examples

King Street Center: Achieved the maximum points for LEED EB EA Credit 1.
Property Manager: Francine Fielding, Wright Runstad

First Hill Streetcar Maintenance Facility: Reduced energy consumption by over 40% from an ASHRAE 90.1-2007 baseline by utilizing a high efficiency VRF system, condensing boiler, energy recovery for the ventilation air, high performance lighting design with daylighting and occupancy controls, plus a roof mounted photovoltaic system.

Washington State DNR Olympia Shop Building: Reduced energy consumption by over 40% from an ASHRAE 90.1-2007 baseline by utilizing a high efficiency lighting system and an energy recovery ventilator for the heated shop area.

Implementation Resources

- The Seattle Public Utilities Green Business Program website contains information about available energy rebates and incentives, <http://www.seattle.gov/util/forbusinesses/greenyourbusiness/rebatesincentives/>.
- Seattle Energy Code resources, <http://www.seattle.gov/DPD/codesrules/codes/energy/resources/default.htm>.

- Whole Building Design Guide (Equipment Reliability), www.wbdg.org/design/func_oper.php.
- HVAC Engineering web page on the online Whole Building Design Guide, <http://www.wbdg.org/design-disciplines/hvac-refrigerating-engineering>.
- BetterBricks contains a wealth of tools and resources related to energy-efficiency strategies, www.betterbricks.com.
- ENERGY STAR provides guides and resources for energy-efficient buildings, www.energystar.gov.
- King County Energy Plan, https://www.kingcounty.gov/~media/services/environment/wastewater/resource-recovery/plans/1802_KC-WTD-Energy-Plan.
- King County, Energy Performance Compliance Checklist, see Appendix I.
- Northwest Energy Efficiency Council, Energy Efficiency Service Providers, www.neec.net.
- American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc. (ASHRAE) publishes numerous standards, guides, and technical papers related to HVAC issues, www.ashrae.org.
- Seattle City Light provides information about energy incentives programs from Seattle City Light, www.seattle.gov/light.
- U.S. Department of Energy website offers energy saving tips, rebates, and incentives, www.energy.gov.
- Whole Building Design Guide to Optimize Energy Use, <https://www.wbdg.org/design-objectives/sustainable/optimize-energy-use>.
- National Park Service Preservation Brief No. 3: Improving Energy Efficiency in Historic Buildings, <https://www.nps.gov/tps/how-to-preserve/briefs/3-improve-energy-efficiency.htm>.
- National Park Service Preservation Brief No. 24: Heating, Ventilating, and Cooling Historic Buildings—Problems and Recommended Approaches, <https://www.nps.gov/tps/how-to-preserve/briefs/24-heat-vent-cool.htm>.
- National Park Service Technical Services: Weatherizing and Improving the Energy Efficiency of Historic Buildings, <https://www.nps.gov/tps/sustainability/energy-efficiency/weatherization.htm>.

EN Credit 3.0: Install on-site renewable energy sources (1-4 points)

Intent

To reduce the environmental and economic impacts associated with fossil fuel energy production and use, to reduce the need for new utility generation, transmission, and distribution infrastructure and the associated development impacts, and to increase project energy resiliency by increasing on-site supplied renewable energy.

Requirements

A project that provides a minimum of 25% of the site energy from on-site renewable energy sources may claim this credit. Site generated renewable energy can be equipment mounted, serving one purpose, or building mounted, providing power for multiple purposes. Excess energy can be fed back to the utility grid (net metering), although opportunities to use the generated energy at the site or adjacent facilities should be thoroughly investigated for feasibility. The more on-site renewable energy the project generates, the more points may be earned (up to 4 points):

- EN credit 3.1 – 25% of annual site energy is provided by on-site renewable energy sources = 1 points
- EN credit 3.2 – 50% of annual site energy is provided by on-site renewable energy sources = 2 points
- EN credit 3.3 – 75% of annual site energy is provided by on-site renewable energy sources = 3 points
- EN credit 3.4 – 100% of annual site energy is provided by on-site renewable energy sources = 4 points

Additional Guidance

On-site renewable energy options including solar electric, solar thermal, geothermal, wind, etc. abound for different project types and can be added to the smallest of projects. Solar panels can be mounted to building or infrastructure roofs (even covered parking and bus shelters have roofs with available space), or free-standing mounts. Care should be taken when adding solar panels to historic buildings; the best location may be on the side or rear of the building, or placing free-standing mounts away from the historic structure. The primary consideration for making this strategy successful and worth pursuing is ensuring that the solar access on your site is adequate. The Pacific Northwest has good solar and wind potential, but shading from trees, other buildings or infrastructure can hinder the productivity of panels or wind turbines. Even if you cannot install solar or wind turbines, a project can be designed to allow future installation.

Implementation Examples

Shoreline Recycling and Transfer Station: Installed solar panels at the facility for on-site energy generation.

Project Manager: Lisa Williams

Brightwater North Mitigation Area: Will build a 1,500-square-foot field house that includes solar panels.

Project Manager: Michael Popiwny

Juanita Bay Pump Station: Provision to install photovoltaic panels on the roof in the future by designing designated sections of roof for nominal photovoltaic panel loads, adding a spare conduit, and including space for a future inverter.

Project Manager: Chris Okuda

Steve Cox Memorial Park Fieldhouse: Solar panel installation on rear roof.

First Hill Streetcar Maintenance Facility: Installed a 6.3 kW photovoltaic system on the roof.

Implementation Resources

- Puget Sound Energy is committed to developing renewable energy resources, <http://pse.com/savingsandenergycenter/Renewables/Pages/default.aspx>.
- Renewable Northwest Project reports renewable energy projects in the Pacific Northwest <http://www.rnp.org/>.
- National Renewable Energy Laboratory's PVWatts calculator, <https://pvwatts.nrel.gov/index.php>.
- National Park Service Technical Services: Solar Panels on Historic Properties, <https://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm>.

EN Credit 4.0: Use only Energy Star certified appliances or equipment as applicable (1 point)

Intent

To reduce energy used by appliances and equipment and encourage the use of high efficiency equipment when energy consuming devices are required. Even in the Northwest, where hydropower has been a popular form of electricity production, more and more electricity is generated by fossil fuel (natural gas and coal). Thus, reducing electricity use for appliances and equipment can result in reduced greenhouse emissions. Reducing electrical requirements can also decrease utility generation, transmission, and distribution requirements, resulting in a reduced demand for new infrastructure with its associated development impacts.

Requirements

A project may claim this credit if all appliances and equipment obtained are Energy Star certified, if an Energy Star rating is available for the type of equipment. Cutsheets of the purchased equipment showing the energy start certification should be included in the project file if this credit is claimed.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- Energy Star Certified Products Directory, <https://www.energystar.gov/products>.

EN Credit 5.1: Verify energy efficiency in commissioning (1 point)

Intent

To verify the project's energy-related systems are installed, calibrated, and perform according to the owner's project requirements (OPR), basis of design and construction documents. The commissioning process ensures that equipment is operating as intended and allows for improvements to be made to efficiency. The process can help to optimize building operations. Benefits of Commissioning include reduced energy use, lower operational costs, reduced contractor callbacks, better building documentation, fewer occupant complaints, and the potential for improved occupant productivity.

Requirements

A project may claim this credit if the project team designates an engineer or a Commissioning Agent to review and comment on the owner's project requirements (OPR), basis of design, and construction documents (during the design phase), and to inspect and verify all mechanical, electrical, and energy consuming plumbing systems have been installed and are operating according to design specifications (during the construction phase). Projects should commission systems specifically with regard to energy use/efficiency, as well as general operation. Commissioning must verify the energy efficiency measures that were originally intended in design. It will ensure the system(s) or facility was installed, calibrated and performs according to the energy-related project requirements, basis of design, and construction documents.

Additional Guidance

Refer to the Building Commissioning Association's Guidelines for best practices (see Implementation Resources.)

Implementation Examples

Issaquah District Court: A new HVAC design and upgrade involved testing and balancing of the HVAC system that was not functioning properly. The goal was to design a new system that is 15 percent more efficient than current American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) standards.

Project Manager: Pat Zuberbuhler

Washington State DNR Olympic Region Shop Building: Developed and implemented a commissioning plan.

Implementation Resources

- Building Commissioning Association (BCA), <http://www.bcxa.org/>.
- BCA New Construction Building Commissioning Best Practices, <https://www.bcxa.org/wp-content/uploads/2018/06/BCA-New-Const-Best-Practices-2018-05-14.pdf>.
- BCA Best Practices in Commissioning Existing Buildings, <https://www.bcxa.org/wp-content/pdf/BCA-Best-Practices-Commissioning-Existing-Construction.pdf>.
- Certified Commissioning Professional Qualifications, <https://bccbonline.org/ccp/>.
- US Department of Energy, Guide to Commissioning for Federal Facilities, https://www.energy.gov/sites/prod/files/2014/07/f17/commissioning_fed_facilities.pdf.
- AABC Commissioning Group, Commissioning Guideline, <http://www.commissioning.org/commissioningguideline/ACGCommissioningGuideline.pdf>.
- ASHRAE Guideline 0-2013 – The Commissioning Process.

- ASHRAE Guideline 1.1-2007: HVAC&R Technical Requirements for the Commissioning Process.
- ASHRAE Guideline 4-2008: Preparation of Operations and Maintenance Documentation for Building Systems.

EN Credit 5.2: Develop Ongoing or Recommissioning Plan (1 point)

Intent

To verify that the project's energy-related systems continue to operate and perform as anticipated through the life of the project. Recommissioning is a process that seeks to improve how an existing building's mechanical and electrical equipment and systems function together. The process can resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life due to changes in the use or occupancy of the facility. Recommissioning improves a building's operations and maintenance (O&M) procedures to enhance overall building performance.

Requirements

A project may claim this credit if the project team develops and implements a plan for ongoing recommissioning of the facility. Within two years after the completion of construction and no less frequent than every five years, carry out an energy recommission of the facility. Such recommissioning shall include comprehensive analysis of facility lighting, envelope, controls, heating/cooling equipment, operations and historical consumption data to ensure each impacted facility is operating efficiently and as anticipated.

Additional Guidance

Refer to the Building Commissioning Association's Guidelines for best practices (see Implementation Resources.)

Implementation Examples

None at this time.

Implementation Resources

- Building Commissioning Association (BCA), <http://www.bcxa.org/>.
- BCA New Construction Building Commissioning Best Practices, <https://www.bcxa.org/wp-content/uploads/2018/06/BCA-New-Const-Best-Practices-2018-05-14.pdf>.
- BCA Best Practices in Commissioning Existing Buildings, <https://www.bcxa.org/wp-content/pdf/BCA-Best-Practices-Commissioning-Existing-Construction.pdf>.
- Certified Commissioning Professional Qualifications, <https://bccbonline.org/ccp/>.
- US Department of Energy, Guide to Commissioning for Federal Facilities, https://www.energy.gov/sites/prod/files/2014/07/f17/commissioning_fed_facilities.pdf.
- AABC Commissioning Group, Commissioning Guideline, <http://www.commissioning.org/commissioningguideline/ACGCommissioningGuideline.pdf>.
- Energy Star's Retrocommissioning Chapter, https://www.energystar.gov/sites/default/files/buildings/tools/EPA_BUM_CH5_RetroComm.pdf.
- ASHRAE Guideline 0-2013 – The Commissioning Process.
- ASHRAE Guideline 1.1-2007: HVAC&R Technical Requirements for the Commissioning Process.
- ASHRAE Guideline 4-2008: Preparation of Operations and Maintenance Documentation for Building Systems.

EN Credit 5.3: Provide Energy Monitoring and Submetering (1 point)

Intent

To understand individual systems' energy use patterns more clearly and identify operations or equipment problems to enable effective energy management.

Requirements

A project may claim this credit if submeters are provided to collect energy use data for all applicable enduse categories, including process or industrial energy consuming systems. Projects which install continuous power monitoring equipment, configure meters to read information accurately, and provide the necessary infrastructure and programming to collect and store data for applicable systems and facilities meet the requirements of this credit. Data is to be collected and stored for no less than 12 consecutive months.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- Pacific Northwest National Laboratory, Guide to Metering Best Practices, <https://www.energy.gov/sites/prod/files/2015/04/f21/mbpg2015.pdf>.
- National Science and Technology Council Committee on Technology, Submetering of Building Energy and Water Usage, https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/submetering_of_building_energy_and_water_usage.pdf.
- Sustainable Facilities Tool, Submetering Overview, <https://sftool.gov/explore/green-building/section/86/submetering/system-overview>.
- 2015 Seattle Energy Code, Section C409, Energy Metering and Energy Consumption Management, http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/p2623021.pdf.

EN Credit 6.o: Apply for Energy Utility Rebates (1 point)

Intent

To encourage projects to take advantage of available utility incentives and rebates when applicable to the project. Seattle City Light and Puget Sound Energy have robust energy efficiency programs that collectively spend over \$130 million each year to encourage local businesses and residences to conserve energy. A critical piece of these programs is providing assessments and financial assistance to businesses of all sizes.

Requirements

Rebates or incentives may be available for installing energy efficient appliances and equipment, heating and cooling systems, water heating systems, lighting, third-party building commissioning, and/or energy analysis. Contact the applicable utility incentive program prior to the construction document phase of the project for details about what incentives are available. Projects which are eligible for incentives or rebates from the local utility and have submitted an application to the utility program are eligible for this credit.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- Puget Sound Energy commercial energy incentives, <https://pse.com/savingsandenergycenter/ForBusinesses/Pages/default.aspx>
- Seattle City Light commercial energy incentives, <https://energysolutions.seattle.gov/your-business/>.

EN Credit 7.0: No on-site fossil fuels except backup generators (1 point)

Intent

To reduce air pollution related to the greenhouse emissions due to the use of fossil fuels on site as an energy source. In King County, energy use in buildings and industrial facilities accounts for nearly half of GHG emissions that occur within King County's geography. Mitigation of greenhouse gas (GHG) emissions is established King County policy, as highlighted by the 2015 King County Strategic Plan climate objective and the 2016 King County Comprehensive Plan, and the 2015 King County Strategic Climate Action Plan - which specifically directs agencies to reduce operational GHG emissions and to collaborate with others to reduce regional emissions to 80% below 2007 levels by 2050. Eliminating the use of fossil fuels as an on-site energy source is an important component of these goals.

Requirements

Projects with no fossil fuel consuming equipment installed on the site besides generators to be used for emergency power only may claim this credit.

Additional Guidance

If there are process energy requirements for the facility or site with options available for the source energy, avoid the use of fossil fuels whenever possible.

Implementation Examples

None at this time.

Implementation Resources

None at this time.

EN Credit 8.0: Innovation or Exemplary Performance Credit (1 point)

Intent

To allow flexibility for projects with special circumstances in which projects innovate in a way that advances the industry and the field of knowledge, or exceeds the performance requirements of an existing credit in this category.

Requirements

'Innovation' means implementing innovative sustainability strategies and solutions that are associated with an existing credit in the energy category, and/or achieve sustainability goals (environmental, social and/or economic) that are not covered by an existing credit. Innovative strategies include (but are not limited to):

- Early adoption of a new technology or methods that can demonstrably improve project performance without negative trade-offs.
- Use of technologies or methods that may be general practice in other regions or parts of the world, but within the unique context of the project (whether climate, regulations, policies, political support, public opinion, etc.) have not yet gained acceptance. Significant efforts are taken to demonstrate the effectiveness of the technology or method within the context and provide a precedent for future adoption.
- Taking significant steps to include research goals within the project's development, or work with a university or research organization to advance the general knowledge of the technology or method.
- Engage local authority having jurisdiction to allow for the inclusion of a design strategy that would not otherwise be allowed under the standard application of codes.

'Exemplary Performance' means exceeding the performance requirements of an existing credit in this category.

Given the broad and undefined nature of this credit – which is intended to encourage creative solutions – more thorough documentation is required. If pursuing this credit, project teams must explain their Innovation or Exemplary Performance in satisfactory detail to provide sufficient justification and explanation. This Innovation or Exemplary Performance point will be closely reviewed and are subject to final approval by the division energy manager.

Additional Guidance

Contact the division energy manager with questions on a proposed innovation or exemplary performance credit.

Implementation Examples

None at this time.

Implementation Resources

None at this time.

Water Management

This category emphasizes low impact development practices to handle stormwater, the use of low-flow water-saving fixtures, high efficiency irrigation, rainwater collection for watering purposes and the practice of installing native and drought-tolerant landscaping. There are a total of 6 points possible.

WM Credit 1.0: Meet stormwater requirements through Low Impact Development (LID) techniques (up to 3 points)

Intent

To reduce runoff volume by infiltrating rainfall water to groundwater, evaporating rainwater back to the atmosphere after a storm and finding beneficial uses for water rather than exporting it as a waste product down storm sewers – resulting in less surface runoff and less pollution damage to lakes, streams and coastal waters.

Requirements

Projects that use low impact development techniques to treat stormwater may claim up to 3 points:

- WM credit 1.1 -Treat 50% of stormwater on-site = 1 credit
- WM credit 1.2 - Treat 75% stormwater on-site=2 points
- WM credit 1.3 - Treat100% stormwater on-site= 3 points

Additional Guidance

Any project with any landscaping -- no matter how small -- can specify drought-tolerant native plants or small raingardens. Projects with greater landscaping needs or open space have the opportunity to design in more extensive strategies such as bioswales and large raingardens. All projects with pavement have an opportunity to use porous paving, or to look for ways to reduce the amount of impervious surface altogether. The combination of multiple LID strategies can add a strong aesthetic element to a project, and create an opportunity for demonstration and education. Examples of LID Techniques include:

- Permeable pavement, which allows direct infiltration into the ground. While most often applicable for parking surfaces, permeable pavement is suitable for roads, sidewalks and paths. Examples include grassed modular pavement, porous concrete and concrete pavers with gravel infill.
- Bio-retention swales or ponds (also called rain gardens) can provide a significant amount of contaminant uptake and runoff reduction. Design roads and parking lots to drain to localized systems rather than storm drains, to increase ground infiltration and evaporation. Specify drought-tolerant native plants that have the specific ability to absorb heavy metals.
- Open conveyance reduces stormwater volumes by allowing evaporation and ground infiltration. This type of conveyance can be integrated alongside road shoulders as grassy swales or integrated into sidewalks.

Implementation Examples

SE 304th Street at 124th Avenue SE project in Auburn: The Department of transportation - Road Services Division considers LID strategies for all capital projects. The SE 304th Street at 124th Avenue SE project in Auburn implemented LID strategies including using porous concrete cement for new sidewalks to minimize the impervious surfaces and planting the roundabout with native species. These efforts won an “Excellence in Building Green” award in 2008.

Project Manager: Don Bleasdale

Vashon Island Park & Ride: Water and Land Resources Division (WLRD) staff worked on the design for a retrofit and expansion of a park and ride lot on Vashon Island that uses permeable pavement and bioretention areas where stormwater is retained and filtered through vegetation. In addition, WLRD received two grants from Washington State Department of Ecology to study retrofitting two urbanized drainage basins to improve stormwater treatment. These grants are for a 3-year term and LID approaches will be evaluated in both these studies.

Project Manager: Don Althausen

Implementation Resources

- Low-Impact Development Technical Reference Manual for Puget Sound, Puget Sound Action Team and Washington State University Pierce County Extension, 2005. This manual provides technical data, specifications, and performance data for low-impact design strategies. http://www.psp.wa.gov/downloads/LID/LID_manual2005.pdf.
- Puget Sound Partnership LID Local Regulation Assistance Project, http://www.psparchives.com/our_work/stormwater/lid/lid_regs.htm.
- The Low Impact Development Center is a nonprofit organization dedicated to the advancement of Low Impact Development (LID) technology, <http://www.lowimpactdevelopment.org/>.
- The Low Impact Development (LID) Urban Design Tools website site provides guidance to local governments, planners, and engineers for developing, administering, and incorporating LID strategies into their aquatic resource protection programs, <http://www.lid-stormwater.net/>.
- [Low Impact Development Guidance Manual: A Practical Guide to LID Implementation in Kitsap County](#). Designed as a “cookbook” for real estate developers, engineers, and community members interested in LID, as well as planning officials providing guidance on LID projects in Kitsap County. Not a regulatory document, the manual has been approved by the Washington State Department of Ecology as consistent with the State’s Stormwater Management Manual.

WM Credit 2.0: Install high efficiency irrigation systems (1 point)

Intent

To limit or eliminate the use of potable water for landscape irrigation, reducing the burden on municipal water supplies, and allowing for a broader plant species palette while still conserving potable water supplies.

Requirements

Projects that require irrigation and install water efficient systems such as drip irrigation may claim this credit.

Additional Guidance

Drip systems apply water slowly and directly to the roots of plants, using 30-50 percent less water than sprinklers. Projects should mulch to retain soil moisture and reduce evaporation and reduce the need for supplemental irrigation during dry periods. Install rain sensors to regulate flow and set timers to water early in the day or late at night.

Implementation Examples

Bellevue Pump Station: The Bellevue Pump Station installed a high-efficiency irrigation system that will use 50 percent less potable water. This, along with several other innovative sustainability strategies helped the project receive a number of awards and honors, including Grand Award – Project of the Year and Green Project of the Year from the Northwest Construction Consumer Council, as well as What Makes It Green? – Honorable Mention from the American Institute of Architects, Seattle Committee on the Environment.

Project Manager: Shahrzad Namini

Implementation Resources

- Saving Water Partnership is a group of local utilities that fund water conservation programs in Seattle and King County. The website contains information about irrigation rebates, <https://www.savingwater.org/>.

WM Credit 3.0: Install rainwater harvesting systems (1 point)

Intent

To limit or eliminate the use of potable water, thereby reducing the burden on municipal water supply and wastewater systems.

Requirements

A project may claim this credit if a rainwater collection system is installed. Rain collected from the roofs of facilities can be used to offset the water used for sewage conveyance, irrigation and process water use such as facility wash down or vehicle cleaning. To earn this credit the percentage of potable water saved annually over the baseline must be reported.

Additional Guidance

Tanks should be sized to provide year-round water availability, targeting the maximum percentage of water savings with the least amount of capacity.

Implementation Examples

Shoreline Recycling and Transfer Station: The Shoreline Recycling and Transfer Station installed a rainwater collection system to use for washing the floors and equipment.

Project Manager: Lisa Williams

King Street Center: Green features in the building include a water reclamation system that uses rainwater collected on the roof to flush toilets in the building.

Project Manager: Francine Fielding, Wright Runstad

Marymoor Maintenance Facility: Rain is collected from the roofs of two buildings and saved in water storage tanks. Reclaimed water is used to clean lawn and trail maintenance equipment and no potable water is needed for irrigation on the site. In order to save water inside the building, the project installed low-flow fixtures and waterless urinals in the restrooms. It is estimated that the project uses 30% less water than the baseline case for the building.

Project Manager: John McCarthy

Implementation Resources

- LEED BD+C 2009, WE credit 1 Water Efficient Landscaping, see p. 189 for resources. <http://www.usgbc.org>.
- Rainwater Harvesting, Daniel Winterbottom, <http://your.kingcounty.gov/dnrp/library/archive-documents/wlr/pi/pdf/Rainwater-Harvesting.pdf>.
- Saving Water in the Garden, <http://your.kingcounty.gov/dnrp/library/archive-documents/wlr/pi/pdf/cistern-water-saving.pdf>.
- Washington Department of Ecology 'Focus on Rainwater Interpretive Policy' Factsheet – provides guidance on new interpretation of rainwater harvesting policy. Also see the Calculator available on Dept. of Ecology website <http://www.ecy.wa.gov/programs/wr/hq/rwh.html>.

WM Credit 4.0: Plant native and/or adapted plants to eliminate irrigation (1 point)

Intent

To reduce or eliminate the need for supplemental irrigation, thus reducing the burden on potable water supplies, as well as rainwater collection systems, if installed.

Requirements

Projects may claim this credit if they eliminate the need for permanent irrigation by planting native or drought-tolerant species. Newly landscaped areas may be irrigated for about two years or until the plants are established. Once established, however, landscaped areas must be irrigation-free.

Additional Guidance

Vegetation used alongside roads and near facilities should be selected from a native and drought-tolerant plant palette, to take advantage of their adaptation to local climate conditions. When watering and maintenance requirements of plants during establishment period can not be met by internal staff, consider requiring a two-year landscape maintenance contract as part of the project's specifications.

Implementation Examples

Carnation Treatment Plant Administration Building : With the use of drought-tolerant plant species, efficient irrigation, and planting design, a 62 % water use reduction was realized.

Project Manager: Jeff Lundt

Hidden Lake/Boeing Creek Trunk Project: The use of native drought-tolerant plants was designed into the new pump station.

Project Manager: David Dittmar

Implementation Resources

- Saving Water Partnership website contains a plant list that serves as a companion guide to the Choosing the Right Plants Natural Lawn & Garden Guide, <https://www.savingwater.org/>.
- Northwest Native Plant Guide features plants native to Western Washington and native plant gardening tips, <http://green.kingcounty.gov/GoNative/Index.aspx>.
- "Going Native" brochure can be downloaded at <http://www.kingcounty.gov/environment/stewardship/nw-yard-and-garden/native-plant-resources-nw.aspx>.

Use of Sustainable Materials

This category has a total of 10 points possible. It awards points to projects for the use of materials that are more sustainable choices. Points can be attained for using low-emitting adhesives, sealants and paints, using materials that come from within 500 miles of the project, using high-content recycled materials, using Forest Stewardship Council certified wood, using renewable materials, using cement substitutes and using salvaged materials.

SM Credit 1.0: Use low-emitting materials for 100% of adhesives & sealants (1 point)

Intent

Using low-emitting adhesives and sealants reduces the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements

Projects that specify and use low-emitting adhesives and sealants may claim this credit. Adhesives and sealants used on the interior of the building (i.e. inside the weather barrier and applied on-site) should meet the South Coast Air Quality Management District (SCAQMD) Rule #1168 (as amended date of January 7, 2005).

Additional Guidance

None at this time.

Implementation Examples

South Treatment Plant Administration Building: This project achieved LEED IEQ 4.1 through 4.4.
Project Manager: Jacquelynn Roswell

Shoreline Recycling and Transfer Station: This project achieved LEED IEQ 4.1 through 4.4.
Project Manager: Lisa Williams

Implementation Resources

- South Coast Air Quality Management District (SCAQMD) Rule 1168. Refer to LEED BD&C, 2009 Edition, p 471, for table that list the Volatile Organic Compound (VOC) limits for adhesives and sealants per the SCAQMD Rule #1168 (as amended date of January 7, 2005).
<http://www.usgbc.org>.
- Green Seal GS-36 establishes environmental requirements for commercial adhesives,
<http://www.greenseal.org/GreenBusiness/Standards.aspx?vid=ViewStandardDetail&cid=0&sid=22>.

SM Credit 2.0: Use low-emitting materials, 100% of paints and coatings (1 point)

Intent

Using low-emitting adhesives and sealants reduces the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements

Projects that specify and use low-emitting paints and coatings may claim this credit. Paints and coatings used on the interior of the building (i.e. inside the weather barrier and applied on-site) should meet the following standards:

- Architectural Paints and coatings applied to interior walls and ceilings must not exceed the VOC content limits established in the Green Seal GS-11 Standard, Paints, 1st Edition, May 20, 1993
- Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of 250g/L established in the Green Seal Standard GC-03, Anti-corrosive Paints, 2nd Edition, January 7, 1997
- Clear wood finishes, floor coatings, stains, primers, and shellacs applied to the interior building elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

Additional Guidance

None at this time.

Implementation Examples

South Treatment Plant New Administration Building: This project achieved LEED IEQ 4.1 through 4.4.
Project Manager: Jacquelynn Roswell

Implementation Resources

- Refer to LEED BD&C, 2009 Edition, p 482-483, for tables of VOC limits for paintings and coatings.
- Green Seal GS-11 establishes environmental requirements for paints and coatings including wall, anti-corrosive, and reflective coatings, floor paints and primers and undercoats, <http://www.greenseal.org/GreenBusiness/Standards.aspx?vid=ViewStandardDetail&cid=0&sid=6>.

SM Credit 3.0: Use materials sourced regionally (1 - 3 points)

Intent

To increase demand for building materials and products that are extracted and manufactured locally, thereby encouraging the use of local resources and reducing the environmental impacts due to transportation.

Requirements

Projects that use building materials that are mined or manufactured within the region may earn up to 3 points for this credit.

- SM credit 3.1 - Materials sourced within a 500 miles radius of the product and comprise at least 10% (based on cost) of building materials = 1 point
- SM credit 3.2 - Source all heavy materials—such as concrete, steel, fill, sub-base and asphalt within 50 miles = 1 point
- SM Credit 3.3 – Source all plants grown within 250 miles = 1 point

Additional Guidance

If possible, use materials that are native to the region, such as specific rock types or wood species. Local materials for infrastructure projects are relatively easy to find and are often common practice.

Implementation Examples

South Treatment Plant New Administration Building: Achieved LEED MR 5.1 and 5.2 for sourcing and harvesting locally.

Project Manager: Jacquelynn Roswell

Implementation Resources

- Sustainable Sites Initiative, Credit 5.6 Use Regional Materials, p. 60. Guidelines and Performance Benchmarks are available for download at <http://www.sustainablesites.org/rating-system>.
- Living Building Challenge, Materials Petals Handbook, <http://living-future.org/lbc/project-team-resources>.

SM Credit 4.0: Use high recycled-content materials (1 point)

Intent

To increase the demand for building products incorporating recycled content materials. This will reduce impacts resulting from extraction and processing of virgin materials.

Requirements

Projects that incorporate at least 10% high recycled-content (pre- and post-consumer waste) materials, based on cost, of the total project materials cost, may claim this credit.

Additional Guidance

Examples of recycled content materials include: crushed concrete or asphalt aggregate, fly ash and slag replacement for cement, steel made with a high post-consumer recycled content, or composite wood products with recycled content rather than virgin lumber.

In the project's specifications, note the percentage of pre- and post-consumer content for specific products to be used.

Implementation Examples

South Treatment Plant Administration Building: Achieved LEED MR 4.1 and 4.2.
Project Manager: Jacquelynn Roswell

DDES Black River Office Building: In 2007, all public areas in the Blackriver Office Building were re-carpeted with 997 square yards of recycled carpet tiles. The existing carpet was returned to the Lee's Carpet manufacturing plant to be recycled.
Project Manager: Robert Renouard

Implementation Resources

- The EPA Comprehensive Procurement Guidelines provides information on materials that are available with recycled content and recommended ranges, www.epa.gov/epaoswer/non-hw/procure/index.htm.
- Recycled-Content Products Database is a searchable recycled content products database, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

SM Credit 5.0: Use FSC certified sustainable wood (1 point)

Intent

To promote the practice of sustainable forestry.

Requirements

Projects that specify and use sustainably harvested wood that is certified by the Forest Stewardship Council (FSC) may claim this credit. A minimum purchase of 25% of the overall wood budget must be FSC certified wood or wood products for wood building components. Building components must be a permanent part of the project to be included.

Additional Guidance

None at this time.

Implementation Examples

Ryerson Base Improvements: Achieved LEED MR Credit 7 for use of FSC Certified wood.
Project Manager: Ron Moattar

Implementation Resources

- Forest Stewardship Council (FSC) is a certification system that provides internationally recognized standard-setting, trademark assurance and accreditation services to companies, organizations, and communities interested in responsible forestry, <http://www.fsc.org/>.

SM Credit 6.o: Use renewable materials (1 point)

Intent

To reduce the use of finite and long-cycle renewable materials by replacing them with renewable materials.

Requirements

A project that uses renewable materials made from plants (such as bamboo, cork, wool and cotton) for 2.5% of the project's materials cost may claim this credit.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- American Bamboo Society, www.americanbamboo.org/.
- Green Materials 101, http://your.kingcounty.gov/dnrp/summit/documents/Green_Materials-Southard-Beatty.pdf

SM Credit 7.0: Use cement substitutes (1 point)

Intent

The use of cement substitutes such as fly ash or slag reduces the amount of greenhouse gas emissions associated with the manufacture and use of Portland cement.

Requirements

Projects that use cement substitutes may claim this credit. Concrete used should contain at least 5% cement substitute.

Additional Guidance

None at this time.

Implementation Examples

Houghton Transfer Station Roof Replacement & Site Improvements: For the site improvement work (not completed as of this writing), the contractor will be using ecology blocks, made from recycled concrete with 40 % fly ash as cement substitute.

Project Manager: Francis Gaspay

148th Avenue NE Pedestrian Improvements: The project used a high percentage of slag, a byproduct of iron production, in the cement mix (50/50), allowing Roads staff to test this material for strength and durability. As a cement substitute, it can replace a significant percent of the Portland cement used in concrete mixes, which reduces greenhouse gas emissions generated in the production of Portland cement. More than 1,250 feet of curb and gutter was constructed using the slag-cement mix, reducing greenhouse gas emissions by an estimated 14,300 pounds.

Project Manager: Frank Overton

Implementation Resources

None at this time.

SM Credit 8.o: Reuse salvaged materials (1 point)

Intent

To reduce the use of virgin materials on projects and reduce the amount of materials needlessly disposed.

Requirements

Projects that use salvaged materials for 5% of the project's materials cost may claim this credit. Projects impacting existing buildings over 40 years old that retain 25% of existing materials may claim this credit. Materials may be salvaged from the project or outside of the project.

Additional Guidance

None at this time.

Implementation Examples

Maury Island Marine Park Pier Removal: The project involved deconstruction of a 285-foot dilapidated pier and the salvage of reusable materials for future use on the site for a potential observation deck. 575 linear feet of rail system and 4,275 square feet of timber decking was salvaged. This Community Partnership Grant Project coordinated with the "Friends of Maury Island" community group.

Project Manager: Chris Erickson

Soos Creek Trailhead Phase IV: The trailhead was constructed within the footprint of an approximately 500-square-foot residential lot. All reusable materials from the existing house were salvaged. The existing well and septic system was used for the new trailhead restroom.

Project Manager: Kelly Donahue

Brightwater Treatment Plant: Met exceptionally high standards for recycling construction material waste, including salvaging and reusing approximately 75 tons of equipment, building materials, and complete structures, and diverting approximately 350,200 tons of construction and demolition (C&D) debris from landfill disposal.

Project Manager: Michael Popiwny

Implementation Resources

- King County Materials Resource Reuse Database contains a directory listing of businesses and organizations that accept unwanted items from residents and businesses in King County, Washington, for reuse, recycling or proper disposal, <http://your.kingcounty.gov/solidwaste/wdidw/materials.asp>.
- King County Green Tools website contains information about deconstruction and salvage practices, <http://your.kingcounty.gov/solidwaste/greenbuilding/construction-recycling/deconstruction-salvage.asp>.
- Second Use Building Materials, <http://www.seconduse.com>.
- The ReStore, <http://www.re-store.org>.
- Earthwise Salvage, <http://www.earthwise-salvage.com/>.

Enhanced Performance

There are 6 possible points available under this category. Points available under this category award projects that bring added value to the project during design, construction, and/or on-going operations and maintenance.

EP Credit 1.0: Performance Reporting (1-4 points)

Intent

Contribute to on-going learning of the Division and the County about what is performing as anticipated and what needs to be modified or replaced with a better solution.

Requirements

Projects that document and report the actual performance of prerequisites and/or credits will earn up to 4 points for this credit.

- EP credit 1.1 - Report the performance of Prerequisite 5 after one year of occupancy/opening
- EP credit 1.2 - Report the performance of Prerequisite 6 after one year of occupancy/opening
- EP credit 1.3 - Report the performance of Prerequisite 7 after one year of occupancy/opening
- EP credit 1.4 - Report the performance of any one or more credit after one year of occupancy/opening

Additional Guidance

Projects will not be penalized for report findings that show a system, material, practice or policy is under-performing.

Implementation Examples

None at this time.

Implementation Resources

None at this time.

EP Credit 2.0: Submit Documentation Checklist & Supporting Documentation (1 point)

Intent

Contribute to on-going learning of the Division and the County by sharing data and documentation of project prerequisites and credits.

Requirements

Projects that complete and submit the Sustainable Infrastructure Documentation Checklist with supporting documentation will earn 1 point.

Additional Guidance

Projects should begin completing the Sustainable Infrastructure Documentation Checklist and compiling supporting documentation during the design phase. Submit the checklist along with supporting documentation and scorecard when project documentation is complete.

Implementation Examples

None at this time.

Implementation Resources

None at this time.

EP Credit 3.0: LEED® Accredited Professional (1 point)

Intent

Build knowledge capacity of team members and provide a leadership role for team members who have earned the credential of LEED Accredited Professional.

Requirements

Projects that have a least one LEED AP on the team will earn one point.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- Green Building Certification Institute, www.GBCI.org.

Identify Historic Resources and Promote Their Preservation

Historic resources are the buildings, structures, sites, districts, and large objects that have survived to the present – historic commercial areas, houses, parks, bridges, ships, archaeological sites and more – that can explain history and are important because of their association with significant local, state or national, themes, events, individuals or eras in history. They also include traditional cultural places which aren't obvious constructions but continue to have significant meaning to people – Native American myth and vision quest sites, outdoor baptism beaches and traditional meeting places that have been important to the cultural life of communities over a long period of time. Historic buildings serve as a community touchstone—tangible icons of the present generation's connection to the past. Such historic resources are a significant part of the heritage, education and economic base of King County, and the economic, cultural and aesthetic well-being of the county cannot be maintained or enhanced by disregarding its heritage and by allowing the unnecessary destruction or defacement of such properties.

HP Credit 1.0: Landmark designation of qualified property (1 point)

Intent

Landmark designation is a source of pride in local history and is exemplified through the preservation and enhancement of the county's significant historic buildings, structures, landscapes, neighborhoods, roadways, and archaeological sites. Protecting historic resources is most productive when all relevant parties work together – owners, preservation organizations, regulatory agencies and others. Several county agencies own and manage landmarks and eligible historic properties. Landmark designation can also be a source of capital funding for restoration or rehabilitation projects.

Requirements

Projects which involve a historic resource that becomes a designated county or city landmark may claim this credit. The credit can also be claimed if the project involves an already designated landmark and the landmark nomination is updated to include additional criteria.

Additional Guidance

Consult with HPP staff early in a project to determine the landmark eligibility of historic resources, not just for buildings, but for potential cultural landscapes. Keep in mind that resources built in the 1970s may be eligible, as the minimum age criteria is only 40 years.

Implementation Examples

The King County Courthouse, Preston Activity Center, Steve Cox Memorial Park Fieldhouse, Fall City Hop Shed, and numerous county-owned bridges are all designated King County landmarks.

Implementation Resources

- 4Culture offers annual Preservation Special Projects grants that can be used for preparation of landmark nominations, <https://www.4culture.org/grants/preservation-projects/>.
- King County Technical Paper No. 5: Landmark Designation Criteria, <https://www.kingcounty.gov/services/home-property/historic-preservation/resources-links.aspx>.

HP Credit 2.0: Adaptive reuse of existing building (up to 3 points)

Intent

Reusing existing buildings, whether or not they are eligible for landmark designation is inherently sustainable. Whether buildings can be used for a similar use, such as the conversion of a fraternal lodge as a community center, or whether the use is completely different, like the conversion of a school building to residential units, there are many opportunities to reuse existing structures. Often times this even results in a reduced implementation cost.

Requirements

Projects retaining 75% or more of the existing structural components and building envelope may claim 3 points. Projects retaining 50% or more may claim 2 points. Projects retaining 25% or more may claim 1 point.

Additional Guidance

None at this time.

Implementation Examples

Tolt-MacDonald Park barn converted to picnic shelter.

Implementation Resources

- National Park Service: Historic Preservation is Inherently a Sustainable Practice, <https://www.nps.gov/tps/sustainability.htm>.
- National Park Service: Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings, <https://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf>.

HP Credit 3.0: Retrofit historic windows and doors (up to 2 points)

Intent

Windows are often considered the most character-defining features of historic buildings. As a result, the repair or retrofit of these historic windows is critical for good preservation practice. If original windows exist in a historic building that will be impacted by a project, the repair and restoration of these windows is encouraged. This can include additional weather stripping, the addition of interior or exterior storm windows, or the modification of the windows to include insulated glazing. If a project involves a historic building that has had replacement windows that are not in the character of the original or are not energy efficient, replacement of these windows with windows that are replicas of the original windows is encouraged.

Requirements

Projects that repair and retain historic windows, add interior or exterior storm windows to historic windows, or that replace non-historic windows with appropriate replicas based on historic documentation may claim 2 points. Projects that retrofit historic windows with insulated glazing may claim 1 point.

Additional Guidance

None at this time.

Implementation Examples

None at this time.

Implementation Resources

- National Park Service Preservation Brief No. 9: The Repair of Historic Wooden Windows, <https://www.nps.gov/tps/how-to-preserve/briefs/9-wooden-windows.htm>.
- National Park Service Preservation Brief No. 13: The Repair and Thermal Upgrading of Historic Steel Windows, <https://www.nps.gov/tps/how-to-preserve/briefs/13-steel-windows.htm>.
- 4Culture offers annual Landmarks Capital grants that can be used for rehabilitation or retrofit of historic windows and doors, <https://www.4culture.org/grants/landmarks-capital/>.

