

Responses to MR Section Comments on LEED-EB Comment Draft 2 (Updated August 30, 2004)

Category	Comment #	Credit	Submitted By	Organization	Likes and Dislikes	Ways To Improve	Language Changes	Proposed Response	Proposed change to LEED-EB for the Ballot Draft	Type of Change
Materials & Resources	MRp2-Com1	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	THEOJR (theojoz@stachera.com)	COHAPAR	Establish minimum source reduction and recycling program elements and quantify current waste stream production volume.	HOW THE PREREQUISITE IS NEED TO HAVE A POLITIC TO REDUCE THE WASTE THROUGH TRAINING AND THE CORRECT UTILIZATION OF	HOW THE PREREQUISITE IS NEED TO HAVE A POLITIC TO REDUCE THE WASTE THROUGH TRAINING AND THE CORRECT UTILIZATION OF	This prerequisite promotes source reduction.	None	None
Materials & Resources	MRp2-Com2	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	Watson (Robert Watson)		MR PR2--Committee did the right thing by lowering the bar a bit on this one and adding the credit for better performance. I think the combo will be more effective than a single, tighter prerequisite.	Credit could be improved by removing the language regarding the calculation procedure to the Reference Guide.	Edt requirement to read: "Below 100 programs per lumen hour using the calculation method in the Reference Guide" Remove to the Reference Guide "The weighted average mercury content of these light bulbs is calculated by: 1) adding up the total weight of mercury in all the light bulbs acquired during the performance period (programs of Hg); and then 2) dividing total mercury content (programs of Hg) by the sum of the lumen hour output of all the light bulbs (lumen hours - calculated by multiplying the rated hours (life) of each light bulb by the mean light output in lumens at 40% of life)". Rated hours of life are defined as stated by the manufacturer (3 hrs on, 20 minutes off, linear fluorescents and Compact fluorescents, HID lamps 11 hours on) and is based on the design or mean light output of the light bulbs (in lumens, Fluorescent lamps measured with a ballast having a ballast factor of 1.0 and measured using instant-start ballast except for T-5s which are measured using program start ballast). The mean light output in lumens is the light output at 40% of light bulb life. T	The description will be left in the requirements section so that users of LEED-EB can understand the requirements even if they do not purchase the LEED-EB Reference Guide.	None	None
Materials & Resources	MRp2-Com3	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	naomiller (Naomi Miller)	Naomi Miller Lighting Design	I support the intent of the document. However, in trying to reduce mercury use, there is a proposed weighted-average lamp mercury content maximum of 100 programs per lumen hour. Calculating this is onerous for the designer. This calculation also needs to be done by the owner on an on-going basis in order to preserve certification on the building, so they need to keep track of every lamp ordered as a replacement and know its mercury content. Changing from a Sylvania lamp contract to a Philips lamp contract (or vice versa) could result in a loss of certification for the building. I have several concerns. I seldom have the luxury of specifying one manufacturer's product on a large job. I would have to specify one manufacturer's TS lamps, for example, and make certain that specific lamp ended up in the sockets on the job. If a GE lamp were provided instead of a Sylvania lamp, for example, my calculation would be off. If an extended life lamp were provided instead of a standard life lamp, my calculation would be off. If a fixture were substituted that used CFT26 lamps instead of CFQ26 lamps, the calculation would be off.	I wish that we could institute a program of lamp recycling instead in order to qualify for the LEED-EB prerequisites. That would ensure that virtually all the mercury ended up in a safe place, even those with published low mercury content values. It would also avoid suggesting that incandescent lamps are better for the environment than fluorescent. At the very least this program criteria should be changed from a prerequisite to a credit.	Delete this prerequisite altogether. Replace with requirement for lamp recycling.	This requirement promotes source reduction which is the highest level of the USEPA's hierarchy of waste reduction actions (1) reduce, (2) reuse, (3) recycle). Recycling is important but it is not as good as source reduction. The essence of sustainability is meeting multiple objectives at the same time. One example is maintaining excellent indoor comfort for occupants while reducing the amount of energy required for heating and cooling. Another example is providing excellent lighting for building occupants and reducing lighting energy use while reducing the amount of mercury brought into buildings in mercury containing light bulbs. This prerequisite supports lighting designers in providing a higher level of sustainability service to building owners: providing excellent lighting for building occupants and reducing energy use for lighting while reducing the amount of toxic material (mercury) brought into buildings in mercury containing light bulbs. Recycling of mercury containing lamps is required to earn points MRp2.1-5.3.	None	None
Materials & Resources	MRp2-Com4	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	spice (Steve Price)	Steelcase Inc.	Requiring reduced Mercury content bulbs will encourage the manufacturers to reduce or eliminate the use of Hg. This is of a positive impact. However, eliminating Hg from the environment is the ultimate goal. This can be accomplished by requiring the recycling of used bulbs containing Hg.	This prerequisite can also be accomplished simply by recycling the used bulbs. The Hg content is no longer a concern since it will not be released to the environment. Bulb recyclers with methods that recover the Hg are becoming more commonly available in most target metropolitan locations. This will keep the Hg out of landfills.	Recycling of Hg containing bulbs will satisfy this prerequisite if the process being used captures 90% or more of the Hg content. The recovery must be certified by a P.E. for the recycling company. (Better yet, make it worth a point.)	See response to Comment MRp2-Com3.	None	None
Materials & Resources	MRp2-Com5	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	imbiffeler (Mark Loeffler)		The reduction of a toxic material such as mercury in the environment is a critical issue; reducing the amount of mercury used in buildings is a direct and effective component of an overall reduction strategy. Most energy-effective lamps currently used in commercial buildings contain mercury. While these lamps require some mercury to function, it is ideal for building operators to take advantage of the lower-mercury content products offered by the major lamp manufacturers. These lamps deliver comparable quality and light output when compared with their higher-mercury counterparts. The most effective way to use lighting to reduce mercury in the environment is to design lighting systems that meet energy efficiency standards, thereby reducing power plant emissions, and to recycle lamps at end-of-life. These strategies are advocated by all US professional lighting industry associations. The weakness of MR Prerequisite 2 is that most buildings will not be able to meet the requirement. Such projects include: those with a standard electrical equipment purchasing process where lamps by different v	Shift requirements of Prerequisite MR-2 to Credit MR-6.1. Shift requirements of existing Credit MR-6 to MR-6.2. By doing this, the sensitivity to mercury content in buildings is emphasized as a crucial issue; however, projects that cannot maintain total mercury content of all mercury-containing light bulbs under 100 programs per lumen hour can pursue other credits.	Delete Prerequisite MR-2. Revise Credit MR-6.1, noting target mercury content of below 100 programs per lumen hour. Add Credit MR-6.2, noting target mercury content of below 80 programs per lumen hour.	See response to Comment MRp2-Com3. Procurement of goods and services is an important part of sustainability. Implementing procurement processes that reduce the amount of toxic material brought into buildings is an important part of sustainable building operation.	None	None
Materials & Resources	MRp2-Com6	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	Howley (Joseph Howley)	GE Lighting	Delete. Delete MR Prerequisite 2 - Toxic Material Source Reduction - Reduced Mercury in Light Bulbs Rationale: Environmental concept is based on flawed calculation. No relevant lighting authority, including NEMA (The National Electrical Manufacturer Association, of which GE, OSRAM SYLVANIA, Philips, Panasonic, Venture, Ivesaki, Ushio, Westinghouse, and Light Sources are members), IES (The Illuminating Engineering Society) or ANSI (The American National Standards Institute), recognizes the required calculation as a valid standard or calculation procedure. As such, it will not be recognized as valid by any part of the architectural design, or lighting community. The calculation does not take into account energy efficiency. Requiring the use of lamps containing the highest light output or longest life without any regard to efficiency in a prerequisite requirement will assure the maximum energy use possible through out the building for the lighting system. Maximum energy will be used because energy efficiency requirements for LEED are point based and not prerequisites. In contrast to a true consensus-based requirement, this calculation appears to be designed	Supporting Facts: 1. The design community cannot calculate the proposed metric accurately. Exact mercury content for thousands of unique lamps types from well over 100 manufacturers is required for this calculation. The vast majority of manufacturers treat specific mercury content information as proprietary and not available to designers. Many companies import products from outside the US. In addition, content changes and designs happen frequently as manufacturers continue to improve product designs. Manufacturing sources and equipment changes also affect mercury dose levels. Typical mercury content in lamps has fallen by over 70% during the past 10-15 years and proprietary design changes are continuous. Lamps can contain less than 1 mg to over 1000 mg depending on the lamp type. Designers will waste innumerable hours trying to verify/ascertain proprietary design information from over 100 lamp manufacturers. Certain manufacturers provide exaggerated data in this area that cannot be trusted or used. The search for credible individual data for thousands of available lamp types will undoubtedly end in frustration. The only credible data designers will be able find	Suggested Replacement for discussion: MR Prerequisite 2 - Mercury-Containing Light Bulb Recycling Requirement. A facility must purchase low-mercury, TCLP passing lamps if available. A facility must maintain an area to store mercury-containing light bulbs for recycling. A facility must recycle at least 80% of spent mercury-containing light bulbs. Rationale: The suggested replacement provides positive environmental benefits. Recycling lamps keeps all of the mercury out of the environment and allows the mercury to be recaptured and used in new lamps. It allows the use of the proper low-wattage lamp sources to reduce power generation based on the existing lighting design. It is easy to identify and use TCLP-passing lamp types if they are available. It is easy to show compliance and encourages the right environmental behavior. In stark contrast, the existing requirement leads to the use of high-lumen, high-wattage, extremely low mercury lamps. Such an approach will greatly increase energy use, greatly increase the release of mercury, carbon dioxide, sulfur dioxide and nitrogen oxides from fossil fuel power generation. Such lamps will i	See response to Comment MRp2-Com3 and to Comment MRp2-Com5. (1) Energy efficiency in LEED-EB addresses energy efficiency in EA Prerequisite 2 and EA Credit 1. LEED-EB EA prerequisite 1 requires that a minimum building energy efficiency level be achieved and EA credit 1 provides 10 points for energy use reduction. Since lighting is one of the building energy efficiency options with the shortest payback period, the prerequisite and the 10 LEED-EB points provide a strong incentive for building managers and owners to maintain high levels of efficiency for lighting. (2) Building owners and managers have the right and responsibility to know how much toxic material (mercury) they are bringing into their buildings in the light bulbs they purchase. (3) Actions to reduce mercury content of mercury containing lamps continues in many forums as well as in LEED-EB. For example, the State of Washington has a law that requires state agencies when purchasing mercury containing lamps to purchase the lamps with the lowest mercury content available. Any lamp manufacturer that wants to sell lamps	None	None
Materials & Resources	MRp2-Com7	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	slafleur (Samantha LaFleur)		The reduction of a toxic material such as mercury in the environment is a critical issue; reducing the amount of mercury used in buildings is a direct and effective component of an overall reduction strategy. Most energy-effective lamps currently used in commercial buildings contain mercury. While these lamps require some mercury to function, it is ideal for building operators to take advantage of the lower-mercury content products offered by the major lamp manufacturers. These lamps deliver comparable quality and light output when compared with their higher-mercury counterparts. The most effective way to use lighting to reduce mercury in the environment is to design lighting systems that meet energy efficiency standards, thereby reducing power plant emissions, and to recycle lamps at end-of-life. These strategies are advocated by all US professional lighting industry associations. The weakness of MR Prerequisite 2 is that most buildings will not be able to meet the requirement. Such projects include: those with a standard electrical equipment purchasing process where lamps by different v	Shift requirements of Prerequisite MR-2 to Credit MR-6.1. Shift requirements of existing Credit MR-6 to MR-6.2. By doing this, the sensitivity to mercury content in buildings is emphasized as a crucial issue; however, projects that cannot maintain total mercury content of all mercury-containing light bulbs under 100 programs per lumen hour can pursue other credits.	Delete Prerequisite MR-2. Revise Credit MR-6.1, noting target mercury content of below 100 programs per lumen hour. Add Credit MR-6.2, noting target mercury content of below 80 programs per lumen hour.	See response to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6	None	None

Materials & Resources	MRp2-Com8	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	Jilody (Lill Cody)		As an idea that provides environmental benefit, mercury reduction is certainly a good idea, however, by making it a prerequisite instead of a credit point, the LEED system is becoming more prescriptive and, truthfully, is moving away from the goal of creating the best integration of building systems and architecture. Instead, the system is requiring use of certain lamp types based not on the proper use of even the best energy consumption, but based on the use of certain types of energy-efficient lamps. This takes away the ability of designers to make decisions about appropriate lamp types through mandate. By driving selection of certain lamp types, this prerequisite could actually increase energy use in certain cases. In these cases, the mercury reduction of lower power consumption (at the power plant) at least partially offsets mercury in lamps. Certain project types (i.e., industrial) would likely be unable to participate in the LEED-EB program at all. Certainly the goal of any LEED program is not to exclude entire project types. It should also be noted that this prerequisite inordinately benefits one lamp manufacturer over	This credit could be improved by moving it out of the prerequisite category and into the LEED credit category. This maintains the issue as an important one, while allowing facilities that cannot comply other options to remain in the LEED-EB program.	Delete Prerequisite MR-2. Revise Credit MR-6.1, noting target mercury content of below 100 picograms per lumen hour. Add Credit MR-6.2, noting target mercury content of below 80 picograms per lumen hour.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6	None	None
Materials & Resources	MRp2-Com9	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	homerip (Pamela Homer)		1. Departure from other LEED Rating Systems. This prerequisite stands out as unique among LEED criteria in that it is an invention of the LEED-EB Committee, not based upon any known consensus-based standards in the global lighting community. All other performance metrics in the family of LEED rating systems refer to specific, credible standards developed through consensus (e.g., ASHRAE/IESNA Standard 90.1) or to Federal standards (e.g., Energy Policy Act of 1992) and use these as baselines. Since the USGBC is not an ANSI-accredited Standards Development Organization, and the prerequisite was not developed with the input of a balance of interests, it cannot be considered viable. 2. Onerous calculations: Professional lighting specifiers (who increasingly are being hired to design or re-design the lighting in buildings) evaluate several types of electric lamps in a building in order to meet the visual performance, aesthetic, energy, and safety needs of building owners and occupants. Lighting selection is not a simple process, especially with the vast array of lamps, ballasts, luminaires etc.	The prerequisite should be deleted, for reasons stated above.	1. Prerequisite status, emphasis on energy: Delete the current MR mercury content prerequisite for lamps and add a prerequisite that buildings meet ASHRAE/IESNA Standard 90.1-2001 (Energy and Atmosphere section) by a certain date. For fluorescent linear types, emphasize conversion from T12 to T8 and T5 fluorescent. 2. Prerequisite status, lamp recycling: Require a long-term plan for lamp recycling.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com10	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	ilama81 (Benjamin Hagin)	Warfel Schragger Architectural Lighting, LLC	The reduction of a toxic material such as mercury in the environment is a critical issue, reducing the amount of mercury used in buildings is a direct and effective component of an overall reduction strategy. Most energy-effective lamps currently used in commercial buildings contain mercury. While these lamps require some mercury to function, it is ideal for building operators to take advantage of the lower-mercury content products offered by the major lamp manufacturers. These lamps deliver comparable quality and light output when compared with their higher-mercury counter-parts. The most effective way to use lighting to reduce mercury in the environment is to design lighting systems that meet energy efficiency standards, thereby reducing power plant emissions, and to recycle lamps at end-of-life. These strategies are advocated by all US professional lighting industry associations. The weakness of MR Prerequisite 2 is that most buildings will not be able to meet the requirement. Such projects include: those with a standard electrical equipment purchasing process where lamps by different v	Shift requirements of Prerequisite MR-2 to Credit MR-6.1. Shift requirements of existing Credit MR-6 to MR-6.2. By doing this, the sensitivity to mercury content in buildings is emphasized as a crucial issue; however, projects that cannot maintain total mercury content of all mercury-containing light bulbs under 100 picograms per lumen hour can pursue other credits.	Delete Prerequisite MR-2. Revise Credit MR-6.1, noting target mercury content of below 100 picograms per lumen hour. Add Credit MR-6.2, noting target mercury content of below 80 picograms per lumen hour.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com11	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	droberts (Daniel Roberts)	Keen Engineering Inc.	We are unaware of any T-12 product that meets the current prerequisite requirement of 100 picograms/lumen-hr. While we agree that buildings should initiate a lighting retrofit to replace T-12 with newer technology, it is not always cost effective or funds may not be available. We would like to confirm that this is the stance LEED EB wants to take. There will be projects that can not afford to perform a lighting retrofit. These projects will not be able to pursue the LEED EB program.	Please refer to previous comment.	Please refer to previous comment.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com12	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	hmckay (Hayden Mckay)		A LEED initiative to reduce toxic materials is an important step. However, it appears that all viable sources of energy effective lamps for commercial applications must contain some mercury to function. Lighting systems that use minimal energy consumption by meeting the newest generation of energy codes will greatly reduce toxic emissions from power plants. Lamp recycling is another valuable means to reduce toxic waste in landfills. It is likely that most commercial buildings will be unable to meet the MR Prerequisite such as projects with a standard electrical equipment purchasing process where lamps by different vendors are often supplied as equals; tenant-controlled maintenance programs; and buildings that use or require more compact fluorescent and/or H.I.D. sources. As important is the onerous calculation process required to demonstrate compliance. To make this a prerequisite may be a show-stopper for many projects. Clients already balk at the fees required to earn credits. The calculation would need to be run whenever any single lamp type varied from the initial purchasing list (which w	Shift requirements of Prerequisite MR-2 to Credit MR-6.1. Shift requirements of existing Credit MR-6 to MR-6.2. By doing this, the sensitivity to mercury content in buildings is emphasized as a crucial issue; however, projects that cannot maintain total mercury content of all mercury-containing light bulbs under 100 picograms per lumen hour can pursue other credits. The calculation requirements must be made significantly simpler. Add a credit for recycling.	Delete Prerequisite MR-2. Revise Credit MR-6.1, noting target mercury content of below 100 picograms per lumen hour. Add Credit MR-6.2, noting target mercury content of below 80 picograms per lumen hour.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com13	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	richman (Eric Richman)	PNL	The current Public Comment Draft #2 of the LEED-EB MR Prerequisite 2 item addresses many of the issues and problems that make it a difficult metric to apply. However, it still remains a cumbersome prerequisite metric - one of the most complicated in LEED-EB. It also only addresses the introduction of lamp-mercury into a building and not its ultimate safe elimination from the environment in any harmful form. This is a primary goal and focus of LEED certification.	The reduced introduction of lamp-mercury into buildings should be encouraged but requirements should not be set that may hinder effective lighting design and energy efficiency as other comments have noted may happen. At the same time, the safe disposal of lamp-mercury should be encouraged as it is in credit points MR recycling credits 5.1, 5.2, and 5.3. Since both of these activities are useful and should be encouraged equally, both should be included as credit points and not requirements.	Change the prerequisite to an eligible credit of one point.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com14	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	boymton (Jeffrey Boynton)	Anni Kale Associates, Inc.	This credit is a beginning to drawing attention to multiple impacts of making sustainable choices by forcing the designer to look at trade offs between light output, lamp life, and toxicity. This is important because many spent lamps are not being recycled and even recycling recaptures a small portion of the mercury.	The credit could be improved to include a prerequisite for lamp recycling.	Provide certification that all lamps have been sent to a lamp recycling facility.	See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com15	Prerequisite 2 (Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	UC Office of the President	UC Office of the President	MR Prerequisite 2 - This item should not rise to the level of prerequisite, but a credit point should be made available (Credit MR seems to cover this). Are there more than one manufacturer of low mercury lamps so that UC can meet competitive bidding requirements?			See responses to Comments MRp2-Com3, MRp2-Com5, and MRp2-Com6.	None	None
Materials & Resources	MRp2-Com16	MR Prereq 2 and 5.1-5.3	Penin Pellegrin	UCSB	A section should include universal waste to include CRT's, lamps, bulbs, household and rechargeable batteries. Soon to be added: all e-waste or electronic wastes as well. Just the light bulbs for this section covers too little under this category.			Battery and lamp recycling are required to earn LEED-EB credits 5.1-5.3. In the future, additional source reduction measures and additional waste reduction measures will be considered for inclusion in LEED-EB.	None	None
Materials & Resources	MRc2-Com1	Credit 2 (Optimize Use of Alternative Materials)	THEQJR (thodooz stachera)	COHAPAR	Reduce the environmental impacts of the materials acquired for use in the operations and maintenance of buildings and in the upgrading of building services.	REDUCE THE ENVIRONMENTAL IMPACTS OF THE MATERIAL ACQUIRED FOR USE IN THE OPERATIONS RENEWABLE MATERIALS AND GRADUAL SUBSTITUTION FOR ALTERNATIVE MATERIALS.	REDUCE THE ENVIRONMENTAL IMPACTS OF THE MATERIAL ACQUIRED FOR USE IN THE OPERATIONS RENEWABLE MATERIALS AND GRADUAL SUBSTITUTION FOR ALTERNATIVE MATERIALS.	OK	None	None
Materials & Resources	MRc2-Com2	Credit 2 (Optimize Use of Alternative Materials)	watson (Robert Watson)		MR 1.1-1.2 needs to be formatted consistent with other multi-tiered credits. For MR 2.1-5 contains what appears to be a very intimidating and complicated calculation.	MR 1.1-1.2: have separate bullet points for each achievement level MR 2: At least note that there will be a calculator or spreadsheet provided to help them go through the calculations	MR 1.1-1.2: Format as follows- Recycle and/or salvage (by weight or volume) any construction, demolition and land clearing waste (if applicable) -at least 50% (1 point) -at least 75% (2 points) MR2: Modify language to read: "One point (up to a maximum of 5) will be awarded for each 10% of total annual purchases (on a dollar basis) that achieve at least one of the following sustainability criteria, as demonstrated using the LEED MR2 Letter Template Calculator"	Requirements will be reformatted as suggested and a template calculator will be mentioned.	Make changes listed in Proposed Response.	Editorial
Materials & Resources	MRc2-Com3	Credit 2 (Optimize Use of Alternative Materials)	sprice (Steve Price)	Steelcase Inc.	Total annual purchases will vary considerably from year to year, it will be necessary to use an average annual purchase rate. The "reuse" or "salvaged onsite through a materials & equipment reuse program" will not show up on a cost basis since they are being reused and not purchased.	Change "10% of total annual purchases" to "10% of average annual purchases". Also include credit for purchase of reusable architectural systems(partials, walls, floors, etc.) so that their initial cost can be captured. THESE SYSTEMS PROVIDE HUGE ENVIRONMENTAL BENEFITS FROM REDUCED WASTE TO LANDFILL, RESOURCE CONSUMPTION AND TRANSPORTATION.	1. change "10% of total annual purchases" to "10% of average annual purchases" OR "10% of purchases over the certification period" which can be as little as 3 months in the first certification under LEED-EB but in subsequent re-certification will be 1 - 5 years. So the average performance over the performance period would be appropriate.	The performance that matters is the performance over the entire performance period which can be as little as 3 months in the first certification under LEED-EB but in subsequent re-certification will be 1 - 5 years. So the average performance over the performance period would be appropriate.	The "annual purchases will be changed to 'purchases over the performance period'."	Editorial

Materials & Resources	MR2-Com4	Credit 2 (Optimize Use of Alternative Materials)	AFF780 (Kenneth Blain)	American Forest Foundation	(2d) Contains at least 50% rapidly renewable resources. • "rapidly" is a relative term and "rapidly renewable materials" is difficult to define. • In the case of wood products, it is unclear which "short-rotation" products would be eligible. • "Short-rotation" relative to what? • This makes little sense from an environmental perspective, since there are various environmental benefits that derive from different age classes and rotation lengths in managed forests. For example, forest stands of longer rotations are desirable as habitat for some species, but not for others that might prefer less cover and more disturbance. • This credit can have the negative impact of encouraging the harvest of short-rotation plants, i.e. bamboo, without a requirement for sustainable yield. (2e) Is FSC certified wood? • Preference for a single certification system discriminates unfairly and inappropriately. • Many credible certification systems have evolved to meet the demands of the marketplace for independent certification of conformance to a recognized sustainable forestry management program. • Crediting only FSC discriminates.	(2d) Contains at least 50% rapidly renewable resources. • The critical element should be yields and not rotation lengths, as improved yields translate into more stored carbon and less overall land disturbance. (2e) Is FSC certified wood? • A credit should be given for the use of materials derived from other credible certified sources, including the SFI program and the American Tree Farm System. Independent comparisons of the SFI and FSC programs by the Meridian Institute and the Pinhol Institute demonstrate that both programs serve to expand the practice of sustainable forest management. (2f) Contains at least 50% materials harvested and processed or extracted and processed within 500 miles of the project. • A study by the National Institute of Standards and Technology (NIST) points out that the calculation method for this credit bears little relationship to environmental impacts that are more a function of mass and transport distances than cost and distance. • This credit is proposed for revision to LEED NC 2.2. The discussion on this credit states that it has "obvious environmental benefit."	(2d) Contains at least 50% rapidly renewable resources. • An additional credit should be given for using renewable resource from intensively managed resources such as planted forest stands (2e) Is FSC certified wood? • In North America, recognized sustainable forestry management programs include the Sustainable Forestry Initiative (SFI), Canadian Standards Association (CSA), American Tree Farm System, along with the FSC. (2f) Contains at least 50% materials harvested and processed or extracted and processed within 500 miles of the project. • As there is no verifiable environmental justification for a regional/local criterion of this kind, this credit as currently formulated should be eliminated.	LEED-EB is following the lead of the LEED-NC rating systems on these issues. If in the future the LEED-NC rating system changes how it addresses these issues, LEED-EB will change as well.	None	None	
Materials & Resources	MR2-Com5	Credit 2 (Optimize Use of Alternative Materials)	gdick (Gregory Dick)		The salvage, re-use, FSC, and recycled content portions of this credit are adequate, but the locally harvested/extracted materials criterion may be detrimental to the environment. For example, the local materials criterion would seem to allow old growth wood that has been clear-cut to earn points as long as it originated within 500 miles. By allowing an either/or approach gives building operators the choice to include materials whose harvest or extraction may have a greater negative environmental impact than the transportation. This would defeat the purpose of the intent of the credit.	The locally derived materials credit should be either a "bonus" point for materials that meet the other 5 criteria or disassociate the local derived criteria from this credit and make it a separate credit.	Either require the alternate materials to be derived within 500 miles or make the locally derived materials a separate credit.	See response to Comment MR2-Com4.	None	None	
Materials & Resources	MR2-Com6	Credit 2 (Optimize Use of Alternative Materials)	UC Office of the President	UC Office of the President	MR credit 2.1.2.5 - Request that the requirement to submit total costs for purchased materials be eliminated. This is a huge data collection effort and does not seem relevant to promoting sustainable building operations.			Sustainable purchasing is a very important part of sustainable building operation. One of the major ways buildings and organizations impact the environment is through the choices made on what to purchase. This is a point, not a prerequisite, so pursuing this is optional for LEED-EB participants.	None	None	
Materials & Resources	MR2-Com7	MR 2.1-2.5	Perrin Pellegrin	UCSB		Add office supplies. Salvage offset percentage should be less than salvaged from onsite. 10% post consumer is too low and there are not any good post-industrial definitions. Need a separate paper category for buying recycled.		Language from requirements allows expansive scope of what purchases to include. "Maintain a sustainable purchasing program covering at least office paper, office equipment, furniture, furnishings and building materials"	None	None	
Materials & Resources	MR3-Com1	Credit 3 (Optimize Use of IAQ Compliant Products)	rwatson (Robert Watson)		EB is its own standard and should not reference NC	Place specific requirements of each of the NC-referenced credits directly into the EB standard. Otherwise we have a moving target and one that may not be appropriate for EB.	You can do the cutting and pasting.	The suggested direct insertion of the language from LEED-NC 2.1 will be done.	Make changes listed in Proposed Response.	Editorial	
Materials & Resources	MR3-Com2	Credit 3 (Optimize Use of IAQ Compliant Products)	srjrice (Steve Price)	Steelcase Inc.	This credit appears to limit credit to building materials only while furniture and furnishings can have a huge impact on IAQ.	Include furniture and furnishings for credit in MR 3.1.8.2 to provide a bigger impact on IAQ of the building.	Under "sustainability criteria," add "Furniture and furnishings shall meet the requirements set forth in LEED NC Credit 4.5." Also, add a reference to furniture and furnishings in the Requirement discussion paragraph.	Language from requirements allows expansive scope of what purchases to include: "At a minimum, these policies shall govern the following product groups: paint and coatings, adhesives, sealants, carpet, composite panels, agrifiber products, and building materials. The building materials covered include any building materials used for building improvements including upgrades, retrofits, renovations, or modifications of the building."	None	None	
Materials & Resources	MR3-Com3	Credit 3 (Optimize Use of IAQ Compliant Products)	AFF780 (Kenneth Blain)	American Forest Foundation	(3d) Composite panels and agrifiber products shall meet the requirements set forth in LEED NC Credit 4.4. • There are no environmental advantages to specifying exclusively urea-formaldehyde free resin systems. In fact, there are a number of disadvantages to such a specification. • In the manufacturing process of composite panel products, many of the available "alternate resin systems" pose dangerous health risks to workers and require substantially more energy to use. • The composite panel industry has proactively reduced formaldehyde emission levels by over 80%.	(3d) Composite panels and agrifiber products shall meet the requirements set forth in LEED NC Credit 4.4. • Rely on national consensus standards that provide minimum acceptable limits for formaldehyde emissions	(3d) Composite panels and agrifiber products shall meet the requirements set forth in LEED NC Credit 4.4. The following modifications apply to LEED NC Credit 4.4. These modifications should be made part of LEED-EB. • Under the subsection heading "Requirements," replace the current sentence with, "Composite wood and agrifiber products must be third-party certified as meeting ANSI standard requirements for formaldehyde emissions, or contain no added urea-formaldehyde resins." • Under the subsection heading "Reference Standards," All the composite wood and agrifiber products used in the building are third-party certified as meeting ANSI standard requirements for formaldehyde emissions. • Under subheading "Documentation Required," "Provide a manufacturer's GreenMark Certification Label for composite wood or agrifiber products that are third-party certified to comply with formaldehyde emission requirements in the product's ANSI standard." • Under subsection heading "Technologies & Strategies," replace the current sentence with, "Specify only composite wood and agrifiber products, or products that"	LEED-EB is following the lead of the LEED-NC rating systems on these issues. If in the future the LEED-NC rating system changes how it addresses these issues, LEED-EB will change as well.	None	None	
Materials & Resources	MR3-Com4	Credit 3 (Optimize Use of IAQ Compliant Products)	PamelaKogan (Pamela Kogan)	Environmental Protection Agency		In the last round of comments the word "indoor" was deleted from requirements and this credit would be improved if instead of deleting this term, both "indoor" and "outdoor" terms were used. One reason for this is that some standards for products have definitions of VOCs based on photochemically reactive compounds that produce smog outdoors, but excludes some compounds that may be of health issue indoors. (Note: Some products are certified to be "low VOC" products but the definition used for VOC is that used by EPA for outdoor air pollution only is limited to carbon compounds that participate in atmospheric photochemical reactions (40 CFR 51.100, page 139-140), and therefore, excludes compounds such as methylene chloride, acetone, and methyl acetate which are problems indoors). Therefore, putting both "indoor and outdoor" in the document will encourage that the product selection is thought about for both environments	Put the word "indoor" back into the requirement section and add "and outdoor" to take into consideration the comment MR3.1.3.2-Com4 from the previous public comment period.		Both "indoor and outdoor" will be added into the requirement section.	Make changes listed in Proposed Response.	Clarification
Materials & Resources	MR3-Com5	Credit 3 (Optimize Use of IAQ Compliant Products)	gdick (Gregory Dick)		The CRI Green Label program referenced in LEED NC c 4.3 required by credit 3 has been superseded with a more stringent requirement because it was inadequate for most chemicals present in carpet. The GreenGuard program is practice-based and proprietary, so is limiting scrutiny of the standard making comparison to other source control protocols impossible.	By requiring the CRI Green Label Plus Carpet Testing Program carpets will be screened for more chemicals and will result in greater source control of IAQ pollutants. California's Special Environmental Requirements specification Section 01350 is a health-based, public domain source control testing standard that should be utilized by the LEED EB rating system. Derivatives of this product such as GreenSeal's SCS-UP-111-2004, Standard Practice for Testing of Volatile Organic Emissions from Various Sources using Small-Scale Environmental Chambers should also be recognized.	c. Carpet systems shall meet the CRI Green Label Plus Carpet Testing Program. d. Composite panels and agrifiber products shall meet the indoor air quality guidelines and emission testing protocols of the California Department of Health Services', Special Environmental Requirements specification Section 01350 or with SCS-UP-111-2004, Standard Practice for Testing of Volatile Organic Emissions from Various Sources using Small-Scale Environmental Chambers.	Requirements for carpet will be changed to include: "c. Carpet systems shall meet the CRI Green Label Plus Carpet Testing Program. d. Composite panels and agrifiber products shall meet the indoor air quality guidelines and emission testing protocols of the California Department of Health Services', Special Environmental Requirements specification Section 01350 or with SCS-UP-111-2004, Standard Practice for Testing of Volatile Organic Emissions from Various Sources using Small-Scale Environmental Chambers."	Make changes listed in Proposed Response.	Clarification	
Materials & Resources	MR4-Com1	Credit 4 (Sustainable Cleaning Products and Materials)	rwatson (Robert Watson)		Credit appears very complicated on its face and is confusing about the basis for the percentage calculation.	Credit says "One point will be awarded for each 30% of the total annual purchases of these products (on a cost basis) that meet one of the following criteria." Then lists cleaning products and disposable janitorial products and trash bags. So, if I buy 50% by carpet cleaner that meets the criteria I get 3 points? What if I buy 30% of my cleaning products, 30% of disposable paper and 30% of trash bags? OR do I need to spend 90% of all my dollars for all three of these areas to achieve maximum credit? Also, reassure people that there is a calculator in the letter template to facilitate compliance with the calculation.	Can't really ascertain intent of committee, so I can't be specific. But, as with any percentage calculation, the Requirement needs to define with precision "percent of WHAT". Add "on a cost basis as determined by the calculator in the Letter Template), so long as the basis of the calculator is transparently described.	The approach is to calculate what percentage of the total purchases in this category meet at least one of the sustainability criteria. The percent of the total purchase in this category that meet at least one of the sustainability criteria determines the number of points earned. This will be clarified in the requirements language.	Make changes listed in Proposed Response.	Editorial	
Materials & Resources	MR4-Com2	Credit 4 (Sustainable Cleaning Products and Materials)	UC Office of the President	UC Office of the President	MR credit 4.1-4.3 - Again request elimination of requirement for reporting costs of purchasing sustainable cleaning materials and products			See response to Comment MR2-Com6.	None	None	
Materials & Resources	MR4-Com3	MR 4.1-4.3	Perrin Pellegrin	UCSB		How about no use of paper or trash bags?		This will need to be explored though credit interpretations over time.	None	None	
Materials & Resources	MR2-Com1	Credit 6 (Additional Toxic Material Source Reduction, Reduced Mercury in Light Bulbs	rwatson (Robert Watson)		Excellent addition. Clarify the location of the calculation procedure consistent with recommendation in MR PR2	Reducing mercury is very important and this will enhance the ability of LEED to do just that. Note that the calculation procedure is in the reference guide, not the body of the standard.	EBI requirement as follows: "The weighted average mercury content of these light bulbs is calculated as described in the EB Reference Guide."	See response to Comment MR2-Com2.	None	None	

Materials & Resources	MRc6-Com2	Credit 6 (Additional Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	iprice (Steve Price)	Steelcase Inc.	The intent of MR 6 should be modified to include the elimination of Hg released to the environment. This will allow credit for recycling/recovery of Hg from bulbs.	The real issue is keeping Hg out of the environment (and landfills). Recycling/recovery of Hg content of bulbs accomplishes that even better than reduced content since those bulbs will be landfilled if not recycled.	Intent: Establish and maintain a toxic material source reduction program and/or a recycling program to eliminate Mercury from being released into the environment. Requirements: This credit can be earned by using a recycling service for Hg containing bulbs that captures at least 90% of the Hg content. The process must be certified by a P.E.	See response to Comment MRp2-Com3	See response to Comment MRp2-Com3	See response to Comment MRp2-Com3
Materials & Resources	MRc6-Com3	Credit 6 (Additional Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	howley (Joseph Howley)	GE Lighting	Delete: MR Credit 6 - Additional Toxic Material Reduction - Reduced Mercury in Light Bulbs Rationale: Environmental concept is based on flawed calculation. No relevant lighting authority, including NEMA (The National Electrical Manufacturer Association, of which GE, OSRAM SYLVANIA, Philips, Panasonic, Venture, Iwataki, Ushio, Westinghouse, and Light Sources are members), IES (The Illuminating Engineering Society) or ANSI (The American National Standards Institute), recognizes the required calculation as a valid standard or calculation procedure. As such, it will not be recognized as valid by any part of the architectural design, or lighting community. The calculation does not take into account energy efficiency. Requiring the use of lamps containing the highest light output or longest life without any regard to efficiency in this credit will assure the maximum energy use possible through out the building for the lighting system. In contrast to a true consensus-based requirement, this calculation appears to be designed solely for commercial gain of one of the committee members and, ironically,	Supporting Facts: 1. The design community cannot calculate the proposed metric accurately. Exact mercury content for thousands of unique lamp types from well over 100 manufacturers is required for this calculation. The vast majority of manufacturers treat specific mercury content information as proprietary and not available to designers. Many companies import products from outside the US. In addition, content changes and designs happen frequently as manufacturers continue to improve product designs. Manufacturing sources and equipment changes also affect mercury dose levels. Typical mercury content in lamps has fallen by over 70% during the past 10-15 years and proprietary design changes are continuous. Lamps can contain less than 1 mg to over 1000 mg depending on the lamp type. Designers will waste innumerable hours trying to vainly ascertain proprietary design information from over 100 lamp manufacturers. Certain manufacturers provide exaggerated data in this area that cannot be trusted or used. The search for credible individual data for thousands of available lamp types will undoubtedly end in frustration. The only credible data designers will be able find	Suggested Replacement for discussion: 1 Point MR Credit 6 - Mercury-Containing Light Bulb Recycling Credit. A facility must maintain an area to store mercury-containing light bulbs for recycling. A facility must recycle at least 90% of spent mercury-containing light bulbs. Rationale: The suggested replacement provides positive environmental benefits. Recycling lamps keeps all of the mercury out of the environment and allows the mercury to be recaptured and used in new lamps. It allows the use of the proper low-wattage lamp sources to reduce power generation based on the existing lighting design. It is easy to show compliance and encourages the right environmental behavior. In stark contrast, the existing credit leads to the use of high-mercury, high-wattage, extremely low mercury lamps. Such an approach will greatly increase energy use, greatly increase the release of mercury, carbon dioxide, sulfur dioxide and nitrogen oxides from fossil fuel power generation. Such lamps will suffer short lives and end up in landfills. The existing requirement will result in far more mercury in the environment from lamp disposal. The existing credit	See response to Comment MRp2-Com3	None	None
Materials & Resources	MRc6-Com4	Credit 6 (Additional Toxic Material Source Reduction, Reduced Mercury in Light Bulbs)	homeip (Pamela Homer)		The pg/ml-hr metric is far more appropriate here, as a credit, than as a prerequisite.	The value should be changed from 80 to 100, in that the value of 80 appears to be based on the current published data of two T8 lamps produced by one manufacturer (who happens to be represented on the LEED-EB committee.)	Replace "80" with "100."	The 100 level in the prerequisite is an increase from the 90 level used in the prerequisite during the pilot and the 80 level earns a point for greater achievement.	None	None
Materials & Resources	Not Substantively Changed	MR Prereq 1.1	Perim Pellegrin	UCSB	2. Under Requirements: should include organics (i.e. wood, food) 3. The section does not cover landscape wastes 4. The section does not distinguish indoor versus outdoor recycling. 5. Procurement/ Management policy should include not only policy but specific process and action plans.			These issues will be addressed in the LEED-EB Reference Guide	None	None
Materials & Resources	Not Substantively Changed	MR Prereq 1.2	Perim Pellegrin	UCSB	6. Under intent: I am not sure if "landfill" is the only waste disposal method we are trying to discourage. I would add in Waste to Energy or incineration as well. 7. Requirements: Recycling area needs to be dictated by the materials that will be diverted after the waste audit. I would question to require at a minimum paper, glass, plastics, cardboard, and metals if a facility generated something else (i.e. food or organics or any other materials). I am also wondering where 50 miles came from? A minimum percentage should be used if facility does not generate the basic recyclables. (i.e. if waste audit shows any of the items are not more than 5% of the waste stream) 8. Potential Tech: Contracting with vendors and suppliers to take back, reuse, or reduce their packaging.			incineration will be added to things being avoided. Source reduction will be mentioned in the Strategies and Technologies section.	Make changes included in Proposed Response.	Editorial
Materials & Resources	Not Substantively Changed	MR 1.1. 1.2	Perim Pellegrin	UCSB	.		Should change the name to more construction, demolition, and renovation since we are addressing EB. Need to stress more reuse of the materials.	The name will be expanded as requested.	Make changes included in Proposed Response.	Editorial
Materials & Resources	Not Substantively Changed		Perim Pellegrin	UCSB		Batteries should be taken out and included in Universal Waste. Percentage should be higher- 25%, 50%, 75%, Zero Waste		LEED-EB includes battery recycling in credit MRS 1-5.3. If in the future this is found to be inadequate other approaches will be considered.	None	None