LEED Rating System Draft
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SMART LOCATION & LINKAGE (SLL)

SLL PREREQUISITE: SMART LOCATION
Required

Intent
To encourage development within and near *existing* communities and public transit infrastructure. To encourage improvement and redevelopment of existing cities, suburbs, and towns while limiting the expansion of the *development footprint* in the region to appropriate circumstances. To reduce vehicle trips and *vehicle miles traveled.* To reduce the incidence of obesity, heart disease, and hypertension by encouraging daily physical activity associated with walking and bicycling.

Requirements
FOR ALL PROJECTS

Either (a) locate the *project* on a site served by existing *water and wastewater infrastructure* or (b) locate the project within a legally adopted, publicly owned, planned water and wastewater service area, and provide new water and wastewater infrastructure for the project.

AND

OPTION 1. INFILL SITES

Locate the project on an *infill site.*

OR

OPTION 2. ADJACENT SITES WITH CONNECTIVITY

Locate the project on an *adjacent site* (i.e., a site that is adjacent to *previously developed* land) where the *connectivity* of the site and adjacent land is at least 90 intersections per square mile as measured within a ½-mile distance of a continuous segment of the *project boundary,* equal to or greater than 25% of the project boundary, that is adjacent to previous development. Existing external and internal intersections may be counted if they were not constructed or funded by the project *developer* within the past 10 years. Locate and/or design the project such that a through-*street* and/or nonmotorized right-of-way intersects the adjacent portion of the project boundary at least every 600 feet on average and at least every 800 feet, connecting it with an existing street and/or right-of-way outside the project; nonmotorized rights-of-way may count for no more than 20% of the total. The exemptions listed in NPD Prerequisite 3, Connected and Open Community, do not apply to this option.

OR

OPTION 3. TRANSIT CORRIDOR OR ROUTE WITH ADEQUATE TRANSIT SERVICE

Locate the project on a site with existing or planned transit service such that at least 50% of *dwelling units* and nonresidential building entrances (inclusive of existing buildings) are within a ¼-mile *walk distance* of bus or streetcar stops, or within a ½-mile walk distance of *bus rapid transit* stops, light or heavy rail stations, or ferry terminals, and the transit service at those stops in aggregate meets the minimums listed in Table 1.

Both weekday and weekend trip minimums must be met.

Weekend trips must include service on both Saturday and Sunday. To determine weekend trips, average Saturday and Sunday service.

Table 1. Minimum daily transit service

	Weekday trips	Weekend trips
Projects with multiple transit types (bus, streetcar, rail, or ferry)	60	40
Projects with commuter rail or ferry service only	24	6

If transit service is planned but not yet operational, the project must demonstrate one of the following:

a. The relevant transit agency has a signed full funding grant agreement with the Federal Transit Administration that includes a revenue operations date for the start of transit service. The revenue operations date must be no later than the occupancy date of 50% of the project's total building square footage.
b. For bus, streetcar, bus rapid transit, or ferry service, the transit agency must certify that it has an approved budget that includes specifically allocated funds sufficient to provide the planned service at the levels listed above and that service at these levels will commence no later than occupancy of 50% of the project's total building square footage.
c. For rail service other than streetcars, the transit agency must certify that preliminary engineering for a rail line has commenced. In addition, the service must meet either of these two requirements:

    - A state legislature or local subdivision of the state has authorized the transit agency to expend funds to establish rail transit service that will commence no later than occupancy of 50% of the project's total building square footage.

      or
    - A municipality has dedicated funding or reimbursement commitments from future tax revenue for the development of stations, platforms, or other rail transit infrastructure that will service the project no later than occupancy of 50% of the project's total building square footage.

OR

OPTION 4. SITES WITH NEARBY NEIGHBORHOOD ASSETS

Include a residential component equaling at least 30% of the project's total building square footage (exclusive of portions of parking structures devoted exclusively to parking), and locate the project near

existing neighborhood shops, services, and facilities ("diverse uses"; see Appendix) such that the project boundary is within a ¼-mile walk distance of at least five diverse uses, or such that the project's geographic center is within a ½-mile walk distance of at least seven diverse uses. In either case the qualifying uses must include at least one food retail establishment and at least one service from each of two other categories, with the following limitations:

a. A single establishment may not be counted in two categories (e.g., a place of worship may be counted only once even if it also contains a daycare facility, and a retail store may be counted only once even if it sells products in several categories).
b. Establishments in a mixed-use building may each count if they are distinctly operated enterprises with separate exterior entrances, but no more than half of the minimum number of diverse uses can be situated in a single building or under a common roof.
c. Only two establishments in a single category may be counted (e.g., if five restaurants are within the required distance, only two may be counted).

SLL PREREQUISITE: IMPERILED SPECIES AND ECOLOGICAL COMMUNITIES CONSERVATION
Required

Intent
To conserve imperiled species and ecological communities.

Requirements
FOR ALL PROJECTS

Consult with the state Natural Heritage Program and state fish and wildlife agencies to determine whether species listed as threatened or endangered under the federal Endangered Species Act, the state's endangered species act, or species or ecological communities classified by NatureServe as GH (possibly extinct), G1 (critically imperiled), or G2 (imperiled) have been or are likely to be found on the *project* site because of the presence of suitable habitat and nearby occurrences. If the consultations are inconclusive and site conditions indicate that imperiled species or ecological communities could be present, perform biological surveys using accepted methodologies during appropriate seasons to determine whether such species or communities occur or are likely to occur on the site.

CASE 1. SITES WITHOUT AFFECTED SPECIES OR ECOLOGICAL COMMUNITY

The prerequisite is satisfied if the consultation and any necessary biological surveys determine that no such imperiled species or ecological communities have been found or have a high likelihood of occurring.

OR

CASE 2. SITES WITH AFFECTED SPECIES OR ECOLOGICAL COMMUNITY

OPTION 1. HABITAT CONSERVATION PLAN

Comply with an approved habitat conservation plan under the Endangered Species Act for each identified species or ecological community.

OR

OPTION 2. HABITAT CONSERVATION PLAN EQUIVALENT

Work with a qualified biologist, a nongovernmental conservation organization, or the appropriate state, regional, or local agency to create and implement a conservation plan that includes the following actions:

- Identify and map the extent of the habitat and the appropriate buffer, not less than 100 feet, according to best available scientific information.

- To the maximum extent practicable, protect the identified habitat and buffer in perpetuity by donating or selling the land or a conservation easement on the land to an accredited land trust or relevant public agency.
- If on-site protection can be accomplished, analyze threats from development and develop a monitoring and management plan that eliminates or significantly reduces the threats.
- If any portion of the identified habitat and buffer cannot be protected in perpetuity, quantify the effects by acres or number of plants and/or animals affected, and protect from development in perpetuity habitat of similar or better quality, on-site or off-site, by donating or selling a conservation easement on it to an accredited land trust or relevant public agency. The donation or easement must cover an amount of land equal to or larger than the area that cannot be protected.

SLL PREREQUISITE: WETLAND AND WATER BODY CONSERVATION Required

Intent

To preserve water quality, natural hydrology, habitat, and biodiversity through conservation of *wetlands* and *water bodies.*

Requirements

Limit development effects on wetlands, water bodies, and surrounding buffer land according to the requirements below. In all cases, the project may not contain any land that has been reclaimed within 20 years of submission for LEED-ND certification.

CASE 1. SITES WITHOUT SENSITIVE AREAS

Locate the *project* on a site that includes no *preproject* wetlands, water bodies, land within 50 feet of wetlands, and land within 100 feet of water bodies.

OR

CASE 2. SITES WITH SENSITIVE AREAS

If the site has preproject wetlands, water bodies, land within 50 feet of wetlands, or land within 100 feet of water bodies, select one of the following two options:

OPTION 1

Locate the project such that *preproject* wetlands, water bodies, land within 50 feet of wetlands, and land within 100 feet of water bodies is not affected by new development, unless the development is minor improvements or is on *previously developed* land.

OR

OPTION 2

Earn at least 1 point under GIB Credit 8, Rainwater Management, and limit any impacts beyond minor improvements to less than the percentage of buffer land listed in Table 1.

Table 1. Maximum allowable area of impacts within buffer zone, by project density

*Residential density (DU/acre)**	*Nonresidential density (FAR)**	*Percentage of buffer land** where impacts beyond minor improvements are allowed*
> 25	> 1.75	≤ 20%
> 18 and ≤ 25	> 1.25 to ≤ 1.75	≤ 15%
> 10 and ≤ 18	> .75 to ≤ 1.25	≤ 10%

≤ 10	≤ .75	≤ 5%

DU = dwelling unit; FAR = floor-area ratio.

* For this option, a mixed-use project may use either its residential or its nonresidential *density* to determine the percentage of allowable impacts, regardless of which is higher.

** For this option, buffer width may vary as long as the total buffer area is equal to the area within 50 feet of wetlands and/or within 100 feet of water bodies, minus excluded features (see below). The minimum buffer width, however, is 25 feet for wetlands and 50 feet for water bodies, measured from the edge. In the minimum buffer, only minor improvements and/or improvements that result in no ecological impairment of the wetland or water body, as determined by a qualified biologist, are allowed.

AND

FOR ALL PROJECTS

Comply with all local, state, and federal regulations pertaining to wetland and water body conservation.

The following features are not considered wetlands, water bodies, or buffer land that must be protected for the purposes of this prerequisite:

- Previously developed land;
- Man-made water bodies (such as industrial mining pits, concrete-lined canals, or stormwater retention ponds) that lack natural edges and floors or native ecological communities in the water and along the edge;
- Man-made linear wetlands that result from the interruption of natural drainages by *existing* rights-of-way; and
- Wetlands that were man-made incidentally and have been rated “poor” for all measured wetland functions. Wetland quality assessment must be performed by a qualified biologist using a method that is accepted by state or regional permitting agencies.

Minor improvements within the buffer may be undertaken to enhance appreciation for the wetland or water body, provided such facilities are open to public access. Only the following improvements are permitted:

- Bicycle and pedestrian pathways no more than 12 feet wide, of which no more than 8 feet may be impervious;
- Activities to maintain or restore native natural communities and/or natural hydrology;
- One single-story structure not exceeding 500 square feet per 300 linear feet of buffer, on average;
- Grade changes necessary to ensure public access;
- Clearings, limited to one per 300 linear feet of buffer on average, not exceeding 500 square feet each, for tables, benches, and access for nonmotorized recreational watercraft;
- Removal of hazardous trees, up to 75% of dead trees; trees less than 6 inches diameter at breast height; trees under 40% condition rating; and up to 20% of trees more than 6 inches diameter at breast height with a condition rating of 40% or higher. The condition rating must be based on an assessment by an arborist certified by the International Society of Arboriculture (ISA) using ISA standard measures; and
- *Brownfield* remediation activities.

Off-street parking is not considered a minor improvement. Direct impacts to wetlands and water bodies are prohibited, except for minimal-impact structures, such as an elevated boardwalk, that allow access to the water for educational and recreational purposes. Structures that protrude into wetlands or water bodies may be replaced, provided the replacement structure has the same or smaller footprint and a similar height.

SLL PREREQUISITE: AGRICULTURAL LAND CONSERVATION
Required

Intent

To preserve irreplaceable agricultural resources by protecting *prime* and *unique soils* on farmland and forestland from development.

Requirements

FOR ALL PROJECTS

Locate the *project* on a site that is not within a state or locally designated agricultural preservation district, unless any changes made to the site conform to the requirements for development within the district (as used in this requirement, district does not equate to land-use zoning).

AND

OPTION 1. SITES WITHOUT AFFECTED SOILS

Locate the project's *development footprint* such that it does not disturb *prime soils, unique soils,* or soils of state significance as identified in a state Natural Resources Conservation Service soil survey.

OR

OPTION 2. INFILL SITES

Locate the project on an *infill site.*

OR

OPTION 3. SITES SERVED BY TRANSIT

Comply with SLL Prerequisite 1, Option 3, Transit Corridor or Route with Adequate Transit Service.

OR

OPTION 4. DEVELOPMENT RIGHTS RECEIVING AREA

Locate the project within a designated receiving area for development rights under a publicly administered farmland protection program that provides for the transfer of development rights from lands designated for conservation to lands designated for development.

OR

OPTION 5. SITES WITH IMPACTED SOILS

If development footprint affects land with prime soils, unique soils, or soils of state significance, as identified in a state Natural Resources Conservation Service soil survey, mitigate the loss through the purchase or donation of easements providing permanent protection from development on land with comparable soils in accordance with the ratios based on densities per acre of *buildable land* as listed in Tables 1 and 2.

Table 1. Mitigation ratios for projects in metropolitan or micropolitan statistical areas, pop. 250,000 or more

Residential density (DU per acre of buildable land available for residential use)	*Nonresidential density (FAR of buildable land available for nonresidential use)*	*Mitigation ratio (acres of easement : acres of project on prime, unique, or significant soil)*
> 7 and ≤ 8.5	> 0.50 and ≤ 0.67	2 to 1
> 8.5 and ≤ 10	> 0.67 and ≤ 0.75	1.5 to 1
> 10 and ≤ 11.5	> 0.75 and ≤ 0.87	1 to 1
> 11.5 and ≤ 13	> 0.87 and ≤ 1.0	.5 to 1
> 13	> 1.0	No mitigation

Table 2. Mitigation ratios for projects in metropolitan or micropolitan statistical areas, pop. less than 250,000

Residential density (DU/acre of buildable land available for residential use)	*Nonresidential density (FAR of buildable land available for nonresidential use)*	*Mitigation ratio (acres of easement : acres of project on prime, unique, or significant soil)*
> 7 and ≤ 8	> 0.50 and ≤ 0.58	2 to 1
> 8 and ≤ 9	> 0.58 and ≤ 0.67	1 to 1
> 9 and ≤ 10	> 0.67 and ≤ 0.75	0.5 to 1
> 10	> 0.75	No mitigation

DU = dwelling unit; FAR = floor-area ratio.

All off-site mitigation must be located within 100 miles of the project.

Up to 15% of the impacted soils area may be exempted from the *density* requirements if it is permanently dedicated for community gardens; this area may also count toward the mitigation requirement for the remainder of the site. Portions of parking structures devoted exclusively to parking must be excluded from the numerator when calculating the *floor-area ratio* (FAR).

The mitigation ratio for a mixed-use project is calculated as follows:

1. Determine the total square footage of all residential and nonresidential uses.
2. Calculate the percentage residential and percentage nonresidential of the total square footage.
3. Determine the density of the residential and nonresidential components as measured in *dwelling units* per acre and FAR, respectively.
4. Referring to Tables 1 and 2, find the appropriate mitigation ratios for the residential and nonresidential components.
5. If the mitigation ratios are different, multiply the mitigation ratio of the residential component by its percentage of the total square footage, and multiply the mitigation ratio of the nonresidential component by its percentage.
6. Add the two numbers produced by step 5. The result is the mitigation ratio.

SLL PREREQUISITE: FLOODPLAIN AVOIDANCE
Required

Intent
To protect life and property, promote open space and habitat conservation, and enhance water quality and natural hydrologic systems.

Requirements
CASE 1. SITES WITHOUT FLOODPLAINS

Locate on a site that does not contain any land within a 100-year high- or moderate-risk floodplain as defined and mapped by the Federal Emergency Management Agency (FEMA) or a state or local floodplain management agency, whichever is more recent.

OR

CASE 2. INFILL OR PREVIOUSLY DEVELOPED SITES WITH FLOODPLAINS

Locate the *project* on an *infill site* or a *previously developed site* or in a nonconveyance area of river or coastal floodplain without storm surge potential where compensatory storage is used in accordance with a FEMA-approved mitigation plan. Comply with the National Flood Insurance Program (NFIP) requirements for developing any portions of the site that lie within a 100-year high-or moderate-risk floodplain, as defined in Option 1. If the project includes construction of any critical facility, such as a hospital, water and sewage treatment facility, emergency center, or fire or police station, the critical facility must be designed and built so as to be protected and operable during a 500-year event, as defined by FEMA.

OR

CASE 3. ALL OTHER SITES WITH FLOODPLAINS

If any part of the site is located within a 100-year high- or moderate-risk floodplain, as defined above, develop only on portions of the site that are not in the floodplain, or that have been previously developed, or that are in a nonconveyance area of river or coastal floodplain without storm surge potential where compensatory storage is used in accordance with a FEMA-approved mitigation plan. Previously developed portions in the floodplain must be developed according to NFIP requirements. If development includes construction of any critical facility, as described above, the critical facility must be designed and built so as to be protected and operable during a 500-year event, as defined by FEMA.

SLL CREDIT: PREFERRED LOCATIONS

Intent

To encourage development within *existing* cities, suburbs, and towns to reduce the environmental and public health consequences of sprawl. To reduce development pressure beyond the limits of existing development. To conserve the natural and financial resources required for infrastructure.

Requirements

Achieve any combination of requirements in the following three options:

OPTION 1. LOCATION TYPE

Locate the *project* in one of the following locations:

a. A *previously developed site* that is not an *adjacent site* or *infill site* .
b. An *adjacent site* that is also a previously developed site .
c. An infill site that is not a previously developed site .
d. An infill site that is also a previously developed site .

AND/OR

OPTION 2. CONNECTIVITY

Locate the project in an area that has existing *connectivity* within 1/2 mile of the *project boundary,* as listed in Table 1.

Table 1. Points for connectivity within 1/2 mile of project

Intersections per square mile	Points
200–250	
251–300	
301–350	
351–400	
>400	

Intersections within the site may be counted if the intersections were not constructed or funded by the *developer* within the past 10 years.

AND/OR

OPTION 3. DESIGNATED HIGH-PRIORITY LOCATIONS

Earn at least 2 points under NPD Credit 4, Mixed-Income Diverse Communities, Option 2, Affordable Housing, and locate the project in one of the following high-priority redevelopment areas: EPA National Priorities List, Federal Empowerment Zone, Federal Enterprise Community, Federal Renewal Community, Department of Justice Weed and Seed Strategy Community, Department of the Treasury Community Development Financial Institutions Fund Qualified Low-Income Community (a subset of the New Markets Tax Credit Program), or the U.S. Department of Housing and Urban Development's Qualified Census Tract (QCT) or Difficult Development Area (DDA).

SLL CREDIT: BROWNFIELD REDEVELOPMENT

Intent

To reduce pressure on undeveloped land by encouraging the remediation and reuse of land and developing sites that are complicated by environmental contamination.

Requirements

OPTION 1. Brownfield Sites

Locate the project on a site, part or all of which is documented as contaminated (by an ASTM E1903–97 Phase II Environmental Site Assessment or a local Voluntary Cleanup Program), or on a site defined as a brownfield by a local, state, or federal government agency, and remediate site contamination to meet the controlling public authority's standards for the future use of the site.

OR

OPTION 2. High-Priority Redevelopment Areas

Achieve the requirements in Option 1;

AND

Locate the project in one of the following high-priority redevelopment areas: EPA National Priorities List, Federal Empowerment Zone, Federal Enterprise Community, Federal Renewal Community, Department of Justice Weed and Seed Strategy Community, Department of the Treasury Community Development Financial Institutions Fund Qualified Low-Income Community (a subset of the New Markets Tax Credit Program), or U.S. Department of Housing and Urban Development's Qualified Census Tract (QCT) or Difficult Development Area (DDA).

SLL CREDIT: LOCATIONS WITH REDUCED AUTOMOBILE DEPENDENCE

Intent

To encourage development in locations shown to have multimodal transportation choices or otherwise reduced motor vehicle use, thereby reducing greenhouse gas emissions, air pollution, and other adverse environmental and public health effects associated with motor vehicle use.

Requirements

OPTION 1. TRANSIT-SERVED LOCATION

Locate the *project* on a site with *existing* transit service such that at least 50% of *dwelling units* and nonresidential building entrances (inclusive of existing buildings) are within a ¼-mile *walk distance* of bus or streetcar stops, or within a ½-mile walk distance of *bus rapid transit* stops, light or heavy rail stations, or ferry terminals, and the transit service at those stops in aggregate meets the minimums listed in Tables 1 and 2. Both weekday and weekend trip minimums must be met.

Projects larger than 125 acres can meet the requirements by locating on a site with existing transit service such that at least 40% of dwelling units and nonresidential building entrances (inclusive of existing buildings) are within a ¼-mile walk distance of bus or streetcar stops, or within a ½-mile walk distance of bus rapid transit stops, light or heavy rail stations, or ferry terminals, and the transit service at those stops in aggregate meets the minimums listed in Tables 1 and 2 (both weekday and weekend trip minimums must be met), as long as the 40% complies with NPD Prerequisite 2 and any portion of the project beyond the 1/4-mile or ½-mile walk distances meets SLL Prerequisite 1, Option 3, Compliant Planned Transit Service.

Projects larger than 500 acres can meet the requirements by locating on a site with existing transit service such that at least 30% of dwelling units and nonresidential building entrances (inclusive of existing buildings) are within a ¼-mile walk distance of bus or streetcar stops, or within a ½-mile walk distance of bus rapid transit stops, light or heavy rail stations, or ferry terminals, and the transit service at those stops in aggregate meets the minimums listed in Tables 1 and 2 (both weekday and weekend trip minimums must be met), as long as the 30% complies with NPD Prerequisite 2 and any portion of the project beyond the 1/4-mile and/or ½-mile walk distances meets SLL Prerequisite 1, Option 3, Compliant Planned Transit Service.

For all projects, weekend daily trips must include service on both Saturday and Sunday. To determine weekend trips, average Saturday and Sunday service.

Table 1. Minimum daily transit service for projects with multiple transit types (bus, streetcar, rail, or ferry).

Weekday trips	Weekend trips	Points
60	40	

76	50	
100	65	
132	85	
180	130	
246	150	
320	200	

Table 2. Minimum daily transit service for projects with commuter rail or ferry service only

Weekday trips	Weekend trips	Points
24	6	
40	8	
60	12	

Projects served by two or more transit routes such that no one route provides more than 60% of the prescribed levels may earn 1 bonus point, up to the maximum 7 points.

If existing transit service is temporarily rerouted outside the required distances for less than two years, the project may meet the requirements, provided the local transit agency has committed to restoring the routes with service at or above the prior level.

OR

OPTION 2. METROPOLITAN PLANNING ORGANIZATION LOCATION WITH LOW VMT

Locate the project:

1. within a region served by a *metropolitan planning organization* (MPO;) and
2. within a *traffic analysis zone (TAZ)* where either
   a. the current annual home-based *vehicle miles traveled* (VMT) per capita (if the TAZ is 100% residential); or
   b. the annual non-home-based VMT per employee (if the TAZ is 100% non-residential) does not exceed 90% of the average equivalent of the metropolitan region value.

The research must be derived from household or employment transportation surveys conducted by the MPO within 10 years of the date of submission for LEED certification. Additional credit may be awarded for increasing levels of performance, as indicated in Table 3.

Mixed-use TAZs must use whichever VMT is greater, either residential per capita or non-residential per employee.

Table 3. Points for low-VMT location

Percentage of average regional VMT per capita	Points
81–90%	

71–80%	
61–70%	
51–60%	
41–50%	
31–40%	
30 or less	
VMT = vehicle miles traveled	

SLL CREDIT: BICYCLE NETWORK AND STORAGE

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To promote bicycling and transportation efficiency and reduce *vehicle miles traveled* (VMT). To improve public health by encouraging utilitarian and recreational physical activity.

Requirements

BICYCLE NETWORK

Design or locate the *project* to meet at least one of the following three requirements:

a. An *existing bicycle network* of at least 5 continuous miles in length is within ¼-mile bicycling distance of the *project boundary.*
b. If the project is 100% residential, an existing bicycle network begins within ¼-mile bicycling distance of the project boundary and connects to a *school* or *employment center* within 3 miles' bicycling distance.
c. An existing bicycle network within ¼-mile bicycling distance of the project boundary connects to at least 10 diverse uses (see Appendix 1) within 3 miles' bicycling distance from the project boundary.

AND

VISITOR OR CUSTOMER BICYCLE STORAGE

Provide visitor or customer bicycle racks for each new building and building undergoing major renovations in the project at the following levels:

a. **Multiunit residential**. Provide secure visitor bicycle racks on-site, with at least one bicycle space per 10 dwelling units but no fewer than four spaces per project site.
b. **Retail.** Provide visitor or customer bicycle racks on-site, with at least two bicycle spaces per 5,000 square feet of retail space, but no fewer than two bicycle spaces per business or four bicycle spaces per project site, whichever is greater.
c. **Nonresidential other than retail.** Provide visitor bicycle racks on-site with at least one bicycle space per 10,000 square feet of new commercial nonretail space but not fewer than four bicycle spaces per building.

AND

OCCUPANT OR WORKER BICYCLE STORAGE

Provide bicycle parking and storage capacity to at least 90% of the new buildings and buildings undergoing major renovations in the project at the levels described below. The total building square footage of any excluded buildings may not be more than 10% of the total building square footage of new buildings and buildings undergoing major renovations in the project.

a. **Multiunit residential.** Provide at least one secure, enclosed bicycle storage space per occupant for 30% of the *planned occupancy* but no fewer than one per unit.
b. **Retail.** Provide at least one secure, enclosed bicycle storage space per new retail worker for 5% of retail worker planned occupancy. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.
c. **Nonresidential other than retail.** Provide at least one secure, enclosed bicycle storage space per new occupant for 5% of planned occupancy. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.

Bicycle storage areas must be locked, located inside or within 100 feet of a building entry, and easily accessible to employees, residents and/or visitors. All storage must be safe, clearly visible from a main entry, served with night lighting, and protected from damage by nearby vehicles. Bicycle racks must not block the pedestrian path of travel or inhibit universal accessibility.

Provide informational signage on using the storage facilities.

Shower and changing facility requirements may be met by providing the equivalent of free access to on-site health club shower facilities, if the health club can be accessed without going outside.

SLL CREDIT: HOUSING AND JOBS PROXIMITY

Intent

To encourage balanced communities with a diversity of uses and employment opportunities.

Requirements

CASE 1. PROJECT WITH AFFORDABLE RESIDENTIAL COMPONENT

Include a residential component equaling at least 30% of the *project*'s total building square footage (exclusive of parking structures), and locate or design the project such that the geographic center (or boundary if the project exceeds 500 acres) is within a ½-mile *walk distance* of *existing* full-time-equivalent jobs whose number is equal to or greater than the number of *dwelling units* in the project; and satisfy the requirements necessary to earn at least 1 point under NPD Credit 4, Mixed-Income Diverse Communities, Option 2, Affordable Housing.

OR

CASE 2. PROJECT WITH RESIDENTIAL COMPONENT

Include a residential component equaling at least 30% of the project's total building square footage (exclusive of parking structures) and locate or design the project such that the geographic center (or boundary if the project exceeds 500 acres) is within a ½-mile walk distance of existing full-time-equivalent jobs whose number is equal to or greater than the number of dwelling units in the project.

OR

CASE 3. INFILL PROJECT WITH NONRESIDENTIAL COMPONENT

Include a nonresidential component equaling at least 30% of the project's total building square footage (exclusive of parking structures) and locate on an *infill site* whose geographic center (or boundary if the project exceeds 500 acres) is within a ½-mile walk distance of an existing rail transit, ferry, or tram stop and within a ½-mile walk distance of existing dwelling units whose number is equal to or greater than 50% of the number of new full-time-equivalent jobs created as part of the project.

SLL CREDIT: STEEP SLOPE PROTECTION

Intent

To minimize erosion to protect habitat and reduce stress on natural water systems by preserving steep slopes in a natural, vegetated state.

Requirements

FOR ALL PROJECTS

All options apply to *existing* natural or constructed slopes. Portions of *project* sites with slopes up to 20 feet in elevation, measured from toe (a distinct break between a 40% slope and lesser slopes) to top, that are more than 30 feet in any direction from another slope steeper than 15% are exempt from the requirements, although more restrictive local regulations may apply.

CASE 1. NO DISTURBANCE OF SLOPES OVER 15%

Locate on a site that has no existing slopes steeper than 15%, or avoid disturbing portions of the site that have existing slopes greater than 15%.

OR

CASE 2. PREVIOUSLY DEVELOPED SITES WITH SLOPES OVER 15%

On portions of *previously developed sites* with existing slopes steeper than 15%, restore the slope area with *native plants* or noninvasive *adapted plants* according to Table 1.

Table 1. Required restoration area of slope

Slope	Restoration
>40%	100%
26% to 40%	60%
15% to 25%	40%

In addition, develop *covenants, conditions, and restrictions* (CC&R); development agreements; or other binding documents that will protect the specified steep slope areas in perpetuity. Comply with the requirements of Option 3 on any slope over 15% that has not been previously developed.

OR

CASE 3. UNDEVELOPED SITES WITH SLOPES OVER 15%

On sites that are not previously developed, protect existing slopes over 15% as follows:

a. Do not disturb slopes steeper than 40% and do not disturb portions of the project site within 50 feet horizontally of the top of the slope and 75 feet horizontally from the toe of the slope.

b. Limit development to no more than 40% of slopes between 25% and 40% and to no more than 60% of slopes between 15% and 25%.
c. Locate development such that the percentage of the *development footprint* that is on existing slopes less than 15% is greater than the percentage of *buildable land* that has existing slopes less than 15%.
d. Develop CC&Rs, development agreements, or other binding documents that will protect steep slopes in perpetuity.

SLL Credit: Site Design for Habitat or Wetland and Water Body Conservation

Intent

To conserve native plants, wildlife habitat, wetlands, and water bodies.

Requirements

CASE 1. Sites without Significant Habitat or Wetlands and Water Bodies

Locate the project on a site that does not have significant habitat, as defined in Case 2 of this credit, or land within 100 feet of such habitat, and fulfill the requirements of Option 1 or 2(a) under SLL Prerequisite 3, Wetland and Water Body Conservation.

OR

CASE 2. Sites with Significant Habitat

Work with both the state's Natural Heritage Program and the state fish and wildlife agency to delineate identified significant habitat on the site. Do not disturb significant habitat or portions of the site within an appropriate buffer around the habitat. The geographic extent of the habitat and buffer must be identified by a qualified biologist, a nongovernmental conservation organization, or the appropriate state or regional agency. Protect significant habitat and its identified buffers from development in perpetuity by donating or selling the land, or a conservation easement on the land, to an accredited land trust or relevant public agency (a deed covenant is not sufficient to meet this requirement).

Identify and commit to ongoing management activities, along with parties responsible for management and funding available, so that habitat is maintained in preproject condition or better for a minimum of three years after the project is built out. The requirement for identifying ongoing management activities may also be met by earning SLL Credit 9, Long-Term Conservation Management of Wetlands and Water Bodies.

Significant habitat for this credit is as follows:

a. habitat for species that are listed or are candidates for listing under state or federal endangered species acts, habitat for species of special concern in the state, and/or habitat for those species and/or ecological communities classified as G1, G2, G3, and/or S1 and S2 species by NatureServe;
b. locally or regionally significant habitat of any size, or patches of predominantly native vegetation at least 150 acres (even if part of the 150 acres lies outside the project boundary); and
c. habitat flagged for conservation under a regional or state conservation or green infrastructure plan.

OR

CASE 3. Sites with Wetlands and Water Bodies

Design the project to conserve 100% of all water bodies, wetlands, land within 100 feet of water bodies, and land within 50 feet of wetlands on the site. Using a qualified biologist, conduct an assessment, or compile existing assessments, showing the extent to which those water bodies and/or wetlands perform the following functions: (1) water quality maintenance; (2) wildlife habitat protection; and (3) hydrologic function maintenance, including flood protection. Assign appropriate buffers (not less than 100 feet for water bodies and 50 feet for wetlands) based on the functions provided, contiguous soils and slopes, and contiguous land uses. Do not disturb wetlands, water bodies, or their buffers, and protect them from development in perpetuity by donating or selling the land, or a conservation easement on the land, to an accredited land trust or relevant public agency (a deed covenant is not sufficient to meet this requirement).

Identify and commit to ongoing management activities, along with parties responsible for management and funding available, so that habitat is maintained in preproject condition or better for a minimum of three years after the project is built out. The requirement for identifying ongoing management activities may also be met by earning SLL Credit 9, Long-Term Conservation Management of Wetlands and Water Bodies. The project does not meet the requirements if it has negative effects on habitat for species identified in Case 2(a).

All Projects

The following features are not considered wetlands, water bodies, or buffer land that must be protected:

a. previously developed land;
b. man-made water bodies (such as industrial mining pits, concrete-lined canals, or stormwater retention ponds) that lack natural edges and floors or native ecological communities in the water and along the edge;
c. man-made linear wetlands that result from the interruption of natural drainages by existing rights-of-way; and
d. wetlands that were created incidentally by human activity and have been rated “poor” for all measured wetland functions; wetland quality assessment must be performed by a qualified biologist using a method that is accepted by state or regional permitting agencies.

SLL Credit: Restoration of Habitat or Wetlands and Water Bodies

Intent

To restore native plants, wildlife habitat, wetlands, and water bodies harmed by previous human activities.

Requirements

Using only native plants, restore predevelopment native ecological communities, water bodies, or wetlands on the project site in an area equal to or greater than 10% of the development footprint.

Work with a qualified biologist to ensure that restored areas will have the native species assemblages, hydrology, and other habitat characteristics that likely occurred in predevelopment conditions. Protect such areas from development in perpetuity by donating or selling the land, or a conservation easement on the land, to an accredited land trust or relevant public agency (a deed covenant is not sufficient to meet this requirement).

Identify and commit to ongoing management activities, along with parties responsible for management and funding available, so that restored areas are maintained for a minimum of three years after the project is built out or the restoration is completed, whichever is later. The requirement for identifying ongoing management activities may also be met by earning SLL Credit, Long-Term Conservation Management of Wetlands and Water Bodies.

The project does not meet the requirements if it has negative effects on habitat for species identified in Case 2(a) of SLL Credit, Site Design for Habitat or Wetland and Water Body Conservation.

SLL Credit: Long-Term Conservation Management of Habitat or Wetlands and Water Bodies

Intent

To conserve native plants, wildlife habitat, wetlands, and water bodies.

Requirements

Create and commit to implementing a long-term (at least 10-year) management plan for new or existing on-site native habitats, water bodies, and/or wetlands and their buffers, and create a guaranteed funding source for management.

Involve a qualified biologist or a professional from a natural resources agency or natural resources consulting firm in writing the management plan and conducting or evaluating the ongoing management.

The plan must include biological objectives consistent with habitat and/or water resource conservation, and it must identify the following:

a. procedures, including personnel to carry them out, for maintaining the conservation areas;
b. estimated implementation costs and funding sources; and
c. threats that the project poses for habitat and/or water resources within conservation areas (e.g., introduction of exotic species, intrusion of residents in habitat areas) and measures to substantially reduce those threats.

The project does not meet the requirements if it has negative effects on habitat for species identified in Case 2(a) of SLL Credit, Site Design for Habitat or Wetland and Water Body Conservation.

NEIGHBORHOOD PATTERN & DESIGN (NPD)

NPD PREREQUISITE: WALKABLE STREETS
Required

Intent
To promote transportation efficiency and reduce vehicle miles traveled (VMT). To improve public health by providing safe, appealing, and comfortable street environments that encourage daily physical activity and reduce pedestrian injuries.

Requirements
Design and build the *project* to achieve all of the following:

a. For 90% of new building frontage, a principal *functional entry* on the front façade faces a public space, such as a street, square, *park, paseo,* or *plaza,* but not a parking lot, and is connected to sidewalks or equivalent provisions for walking. The square, park, or plaza must be at least 50 feet wide at a point perpendicular to each entry.

b. At least 15% of *existing* and new street frontage within and bordering the project has a minimum building-height-to-street-width ratio of 1:3 (i.e., a minimum of 1 foot of building height for every 3 feet of street width).

   - Nonmotorized rights-of-way may be counted toward the 15% requirement, but 100% of such spaces must have a minimum building-height-to-street-width ratio of 1:1.
   - Projects with bordering street frontage must meet only their proportional share of the height-to-width ratio (i.e., only on the project side of the street).
   - Street frontage is measured in linear feet.
   - Building height is measured to eaves or the top of the roof for a flat-roof structure, and street width is measured façade to façade. For building frontages with multiple heights or widths, use average heights or widths weighted by each building's linear share of the total block frontage.
   - *Alleys* and driveways are excluded.

c. Continuous sidewalks or equivalent all-weather provisions for walking are provided along both sides of 90% of streets frontage within the project, including the project side of streets bordering the project. New sidewalks, whether adjacent to streets or not, must be at least 8 feet wide on retail or mixed-use blocks and at least 4 feet wide on all other blocks. Equivalent provisions for walking include *woonerfs* and all-weather-surface footpaths. *Alleys*, driveways, and reconstructed existing sidewalks are excluded from these calculations.

d. No more than 20% of the street frontages within the project are faced directly by garage and service bay openings.

Projects in a designated *historic district* subject to review by a local historic preservation entity are exempt from (b), (c), and (d) if approval for compliance is not granted by the review body. Projects in historic

districts listed in or eligible for listing in a state register or the National Register of Historic Places that are subject to review by a state historic preservation office or the National Park Service are exempt from (b), (c), and (d) if approval for compliance is not granted.

NPD PREREQUISITE: COMPACT DEVELOPMENT
Required

Intent

To conserve land. To promote livability, walkability, and transportation efficiency, and reduce *vehicle miles traveled* (VMT). To leverage and support transit investments. To improve public health by encouraging daily physical activity associated with walking and bicycling.

Requirements

CASE 1. PROJECTS IN TRANSIT CORRIDORS

For *projects* with *existing* or planned transit service (i.e., service with the funding commitments specified in SLL Prerequisite 1, Smart Location) that meets or exceeds the 2-point threshold in SLL Credit 3, Locations with Reduced Automobile Dependence, Option 1, must build at the following densities, based on the *walk distances* to the transit service specified in SLL Credit 3:

a. for residential components located within the walk distances: 12 or more *dwelling units* per acre of buildable land available for residential uses;
b. for residential components falling outside the walk distances: 7 or more dwelling units per acre of buildable land available for residential uses;
c. for nonresidential components located within the walk distances: 0.80 *floor-area ratio* (FAR) or greater of buildable land available for nonresidential uses;
d. for nonresidential components falling outside the walk distances: 0.50 FAR or greater of buildable land available for nonresidential uses.

If the project location is served by a transit agency that has specified guidelines for minimum service densities that are greater than the densities required by this prerequisite, the project must achieve those service densities instead.

OR

CASE 2. ALL OTHER PROJECTS

Build any residential components of the project at a *density* of 7 or more dwelling units per acre of *buildable land* available for residential uses.

AND

Build any nonresidential components of the project at a density of 0.50 FAR or greater of buildable land available for nonresidential uses.

FOR ALL PROJECTS

Density calculations include all planned and existing buildings within the *project boundary,* excluding those portions of parking structures devoted exclusively to parking.

The specified density must be achieved within five years of the date that the first building of any type is occupied.

If one component of the project, residential or nonresidential, meets the minimum density requirement but the other component does not, include only the qualifying density. Use that component's dwelling units per acre or nonresidential floor area in the numerator and the total buildable land area in the denominator. If the resulting density meets the minimum requirement, the prerequisite is achieved.

NPD PREREQUISITE: CONNECTED AND OPEN COMMUNITY
Required

Intent
To promote *projects* that have high levels of internal connectivity and are well connected to the community at large. To encourage development within *existing* communities that promote transportation efficiency through multimodal transportation. To improve public health by encouraging daily physical activity.

Requirements
CASE 1. PROJECTS WITH INTERNAL STREETS

Design and build the project such that its internal *connectivity* is at least 140 intersections per square mile. All *streets* and sidewalks that are counted toward the connectivity requirement must be available for general public use and not gated. Gated areas are not considered available for public use, with the exception of education and health care campuses and military bases where gates are used for security purposes.

AND

Design and build the project with at least one through-street and/or nonmotorized right-of-way intersecting or terminating at the *project boundary* at least every 800 feet, or at existing abutting street intervals and intersections, whichever is the shorter distance. Nonmotorized rights-of-way may count for no more than 20% of the total. This does not apply to portions of the boundary where connections cannot be made because of physical obstacles, such as prior platting of property, construction of existing buildings or other barriers, slopes over 15%, *wetlands* and *water bodies,* railroad and utility rights-of-way, existing limited-access motor vehicle rights-of-way, and parks and dedicated open space.

OR

CASE 2. PROJECTS WITHOUT INTERNAL STREETS

Locate the project such that the connectivity of the existing streets within ¼ mile of the project boundary is at least 90 intersections per square mile. All streets and sidewalks that are counted toward the connectivity requirement must be available for general public use and not gated. Gated areas are not considered available for public use, with the exception of education and health care campuses and military bases where gates are used for security purposes.

NPD CREDIT: WALKABLE STREETS

Intent

To promote transportation efficiency and reduce *vehicle miles traveled* (VMT). To improve public health by providing safe, appealing, and comfortable *street* environments that encourage daily physical activity and reduce pedestrian injuries.

Requirements

A *project* may earn a maximum of 12 points, awarded according to Table 1.

Table 1. Points for walkable street features

Items achieved	*Points*
2–3	
4–5	
6–7	
8–9	
10	
11	
12	
13	
14	
15–16	

<u>Façades and Entries</u>

a. At least 80% of the total linear feet of street-facing building façades in the project is no more than 25 feet from the property line.

b. At least 50% of the total linear feet of street-facing building façades in the project is no more than 18 feet from the property line.

c. At least 50% of the total linear feet of mixed-use and nonresidential street-facing building façades in the project is within 1 foot of a sidewalk or equivalent provision for walking.

d. *Functional entries* to the building occur at an average of 75 feet or less along nonresidential or mixed-use buildings or *blocks.*

e. Functional entries to the building occur at an average of 30 feet or less along nonresidential or mixed-use buildings or blocks

Items d and e are cumulative.

<u>Ground-Level Use and Parking</u>

f. All ground-level retail, service, and trade uses that face a public space have clear glass on at least 60% of their façades between 3 and 8 feet above grade.

g. If a façade extends along a sidewalk, no more than 40% of its length or 50 feet, whichever is less, is blank (without doors or windows).

h. Any ground-level retail, service, or trade windows must be kept visible (unshuttered) at night; this must be stipulated in *covenants, conditions, and restrictions* (CC&Rs) or other binding documents.

i. On-street parking is provided on a minimum of 70% of both sides of all new and *existing* streets, including the project side of bordering streets. The percentage of on-street parking is calculated by dividing the length of street designated for parking by the total length of the curb along each street, including curb cuts, driveways, and intersection radii. Space within the parking lane that is occupied by corner bulb-outs (within 24 feet of an intersection), transit stops, and motorcycle or bicycle parking may be counted as designated for parking in this calculation. *Woonerfs* are not considered streets for this subsection.

j. Continuous sidewalks or equivalent provisions for walking are available along both sides of all streets within the project, including the project side of streets bordering the project. New sidewalks, whether adjacent to streets or not, must be at least 10 feet wide on retail or mixed-use blocks and at least 5 feet wide on all other blocks. Equivalent provisions for walking include woonerfs and all-weather-surface footpaths at least 5 feet wide. Note that these requirements specify wider sidewalks than required by NPD Prerequisite 1, Walkable Streets.

k. If the project has ground-floor *dwelling units,* the principal level of at least 50% of those units has an elevated finished floor no less than 24 inches above the sidewalk grade. Below-grade basement spaces and/or *accessory dwelling units* are exempt from this requirement.

l. In nonresidential or mixed-use projects, 50% or more of the total number of office buildings includes ground-floor retail along 60% of the length of the street-level façade; 100% of mixed-use buildings include ground-floor retail, live-work spaces, and/or ground-floor dwelling units along at least 60% of the street-level façade; and all businesses and/or other community services on the ground floor are accessible directly from sidewalks along a public space, such as a street, square, paseo, or plaza, but not a parking lot.

m. At least 40% of all street frontage within the project has a minimum building-height-to-street-width ratio of 1:3 (i.e., a minimum of 1 foot of building height for every 3 feet of street width).
   - Nonmotorized rights-of-way may be counted toward the 40% requirement, but 100% of such spaces must have a minimum 1:1 ratio of building height to street width.
   - Projects with bordering street frontage must meet only their proportional share of the height-to-width ratio (i.e., only on the project side of the street).
   - Street frontage is measured in linear feet.
   - Building height is measured to eaves or the top of the roof for a flat-roof structure, and street width is measured façade to façade. For building frontages with multiple heights or widths, use average heights or widths weighted by each building's linear share of the total block frontage.
   - *Alleys* and driveways are excluded.

<u>Design Speeds for Safe Pedestrian and Bicycle Travel</u>

n. 75% of new residential-only streets within the project are designed for a target speed of no more than 20 mph.

o. 70% of new nonresidential and/or mixed-use streets within the project are designed for a target speed of no more than 25 mph. A multiway boulevard, with travel lanes separated from access lanes by medians, may apply this requirement to its outer access lanes only (through-lanes are exempt), provided pedestrian crosswalks are installed across the boulevard at intervals no greater than 800 feet.

Sidewalk Intrusions

p. At-grade crossings with driveways account for no more than 10% of the length of sidewalks within the project.

NPD CREDIT: COMPACT DEVELOPMENT

Intent

To conserve land and protect farmland and wildlife habitat by encouraging development in existing areas.
To promote livability, walkability, and transportation efficiency, and reduce *vehicle miles traveled* (VMT).
To improve public health encouraging daily physical activity.

Requirements

Design and build the *project* such that residential and nonresidential components achieve the *densities* per acre of *buildable land* listed in Table 1 (excluding those portions of parking structures devoted to parking).

Table 1. Points for density per acre of buildable land

Residential density (DU/acre)	Nonresidential density (FAR)	Points
> 10 and ≤ 13	> 0.75 and ≤ 1.0	
> 13 and ≤ 18	> 1.0 and ≤ 1.25	
> 18 and ≤ 25	> 1.25 and ≤ 1.75	
> 25 and ≤ 38	> 1.75 and ≤ 2.25	
> 38 and ≤ 63	> 2.25 and ≤ 3.0	
> 63	> 3.0	

DU = dwelling unit; FAR = floor-area ratio.

The specified densities must be achieved within five years of the date that the first building of any type is occupied.

The scoring of a mixed-use project is calculated with a weighted average, according to the following steps.

1. Determine the total square footage of all residential and nonresidential uses.
2. Calculate the percentage residential and percentage nonresidential of the total square footage.
3. Determine the density of each component as measured in *dwelling units* per acre and *floor-area ratio,* respectively.
4. Referring to Table 1, find the appropriate points for the densities of the residential and nonresidential components.
5. If the points are different, multiply the point value of the residential component by its percentage of the total square footage and multiply the point value of the nonresidential component by its percentage.
6. Add the two scores.

NPD CREDIT: MIXED-USE NEIGHBORHOOD CENTERS

This credit is available in the Pilot Credit Library.

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To reduce vehicle miles traveled (VMT) and automobile dependence, encourage daily walking, biking, and transit use, and support car-free living by cluster diverse land uses in accessible neighborhood and regional centers.

Requirements

FOR ALL PROJECTS

Locate or design the *project* such that 50% of its *dwelling units* are within a 1/4-mile *walk distance* of the number of diverse uses (see Appendix) in Table 1. For projects with no dwellings, 50% of dwelling units within 1/4 mile of the *project boundary* must be within a 1/4-mile walk distance of the number of diverse uses specified in Table 1, In either case, diverse uses accessible to each counted dwelling unit must include at least one food retail store and at least one establishment from each of two other categories. Establishments may be inside or outside the project and may be *existing* or *planned diverse uses*.

The specified number of diverse uses must be in place by the time of occupancy according to the percentages indicated in Table 1 (exclusive of portions of parking structures devoted to parking):

Table 1. Points for diverse uses within 1/4-mile walk distance, by time of occupancy

Diverse uses	*Percentage occupancy of total square footage*	*Points*
4–6	20%	
7–10	30%	
11–18	40%	
≥ 19	50%	

The following restrictions apply:

a. A single establishment may not be counted in two categories (e.g., a place of worship may be counted only once even if it also contains a daycare facility, and a retail store may be counted only once even if it sells products in several categories).

b. Establishments in a mixed-use building may each count if they are distinctly operated enterprises with separate exterior entrances, but no more than half of the minimum number of diverse uses can be situated in a single building or under a common roof.
c. Only two establishments in a single category may be counted (e.g., if five restaurants are within the required distance, only two may be counted).

FOR PROJECTS WITH REGIONAL-SERVING RETAIL OF 150,000 OR MORE SQUARE FEET

Projects with retail uses totaling 150,000 or more square feet, if they have at least one retail establishment totaling 75,000 or more square feet, must also meet at least the 2-point threshold for transit service under SLL Credit 3, Reduced Automobile Dependence, Option 1, Transit-Served Location. In this case, planned transit service can be counted. Each retail establishment totaling 75,000 or more square feet must be served by at least one transit stop providing trips that qualify under SLL Credit 3.

If transit service is planned but not yet operational, the project must demonstrate one of the following:

a. The relevant transit agency has a signed full funding grant agreement with the Federal Transit Administration that includes a revenue operations date for the start of transit service. The revenue operations date must be no later than the occupancy date of 50% of the project's total building square footage.
b. For bus, streetcar, *bus rapid transit,* or ferry service, the transit agency must certify that it has an approved budget that includes specifically allocated funds sufficient to provide the planned service at the levels listed above and that service at these levels will commence no later than occupancy of 50% of the project's total building square footage.
c. For rail service other than streetcars, the transit agency must certify that preliminary engineering for a rail line has commenced. In addition, the service must meet either of these two requirements:

    - A state legislature or local subdivision of the state has authorized the transit agency to expend funds to establish rail transit service that will commence no later than occupancy of 50% of the project's total building square footage.

      or

    - A municipality has dedicated funding or reimbursement commitments from future tax revenue for the development of stations, platforms, or other rail transit infrastructure that will service the project no later than occupancy of 50% of the project's total building square footage.

NPD CREDIT: MIXED-INCOME DIVERSE COMMUNITIES

Intent

To promote socially equitable and engaging communities by enabling residents from a wide range of economic levels, household sizes, and age groups to live in a community.

Requirements

Meet the requirements of one or more options below.

OPTION 1. DIVERSITY OF HOUSING TYPES

Include a sufficient variety of housing sizes and types in the *project* such that the total variety of planned and *existing* housing within the project achieves a Simpson Diversity Index score greater than 0.5, using the housing categories below. Projects of less than 125 acres may calculate the Simpson Diversity Index for the area within ¼ mile of the project's geographic center. The Simpson Diversity Index calculates the probability that any two randomly selected *dwelling units* in a project will be of a different type.

Score = $1 - \sum (n/N)^2$

where n = the total number of dwelling units in a single category, and N = the total number of dwelling units in all categories.

Table 1. Points for housing diversity

Simpson Diversity Index score	*Points*
> 0.5 to < 0.6	1
≥ 0.6 to < 0.7	2
≥ 0.7	3

Housing categories are defined by the dwelling unit's net square footage, exclusive of any garage, as listed in Table 2.

Table 2. Housing categories

Type	Square feet
Detached residential, large	> 1,250
Detached residential, small	≤ 1,250
Duplex or townhouse, large	> 1,250
Duplex or townhouse, small	≤ 1,250

Dwelling unit in multiunit building with no elevator, large	> 1,250
Dwelling unit in multiunit building with no elevator, medium	> 750 to ≤ 1,250
Dwelling unit in multiunit building with no elevator, small	≤ 750
Dwelling unit in multiunit building with elevator, 4 stories or fewer, large	> 1,250
Dwelling unit in multiunit building with elevator, 4 stories or fewer, medium	> 750 to ≤ 1,250
Dwelling unit in multiunit building with elevator, 4 stories or fewer, small	≤ 750
Dwelling unit in multiunit building with elevator, 5 to 8 stories, large	> 1,250
Dwelling unit in multiunit building with elevator, 5 to 8 stories, medium	> 750 to ≤ 1,250
Dwelling unit in multiunit building with elevator, 5 to 8 stories, small	≤ 750
Dwelling unit in multiunit building with elevator, 9 stories or more, large	> 1,250
Dwelling unit in multiunit building with elevator, 9 stories or more, medium	> 750 to ≤ 1,250
Dwelling unit in multiunit building with elevator, 9 stories or more, small	≤ 750
Live-work space, large	> 1,250
Live-work space, small	≤ 1,250
Accessory dwelling unit, large	> 1,250
Accessory dwelling unit, small	≤ 1,250

For the purposes of this credit, townhouse and live-work units may have individual ground-level entrances or be within a multiunit or mixed-use building. Double counting is prohibited; each dwelling may be classified in only one category. The number of stories in a building is inclusive of the ground floor regardless of its use.

AND/OR

OPTION 2. AFFORDABLE HOUSING

Include a proportion of new rental or for-sale dwelling units priced for households earning below the *area median income* (AMI). Rental units must be maintained at affordable levels for a minimum of 15 years. Existing dwelling units are exempt from requirement calculations. Meet any combination of thresholds in Table 3, Up to a maximum of 3 points.

Table 3. Points for affordable housing

Rental dwelling units				*For-sale dwelling units*			
Priced up to 60% AMI		*Priced up to 80% AMI*		*Priced up to 100% AMI*		*Priced up to 120% AMI*	
Percentage of	*Points*	*Percentage of*	*Points*	*Percentage of*	*Points*	*Percentage of*	*Points*

total rental units		*total rental units*		*total for-sale units*		*total for-sale units*	
5		10		5		8	
10		15		10		12	
15		25		15		--	--

AMI = area median income.

AND/OR

OPTION 3. MIXED-INCOME DIVERSE COMMUNITIES

A project may earn 1 additional point by earning at least 2 points in Option 1 and at least 2 points in Option 2 (at least one of which must be for providing housing at or below 100% AMI).

NPD CREDIT: REDUCED PARKING FOOTPRINT

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To design parking to increase the pedestrian orientation of *projects* and minimize the adverse environmental effects of parking facilities. To reduce public health risks by encouraging daily physical activity associated with walking and bicycling.

Requirements

For new nonresidential buildings and *multiunit residential* buildings, either do not build new off-street parking lots, or locate all new off-street surface parking lots at the side or rear, leaving building frontages facing streets free of surface parking lots.

AND

Use no more than 20% of the total *development footprint* area for all new off-street surface parking facilities, with no individual surface parking lot larger than 2 acres. For the purposes of this credit, surface parking facilities include ground-level garages unless they are under *habitable building* space. Underground or multistory parking facilities can be used to provide additional capacity, and on-street parking spaces are exempt from this limitation.

AND

VISITOR OR CUSTOMER BICYCLE STORAGE

Provide visitor or customer bicycle racks for each new building and building undergoing major renovations in the project at the following levels.

a. **Multiunit residential**. Provide secure visitor bicycle racks on-site, with at least one bicycle space per 10 dwelling units but no fewer than four spaces per project site.
b. **Retail.** Provide visitor or customer bicycle racks on-site, with at least two bicycle spaces per 5,000 square feet of retail space, but no fewer than two bicycle spaces per business or four bicycle spaces per project site, whichever is greater.
c. **Nonresidential other than retail.** Provide visitor bicycle racks on-site with at least one bicycle space per 10,000 square feet of new commercial nonretail space but not fewer than four bicycle spaces per building.

AND

OCCUPANT OR WORKER BICYCLE STORAGE

Provide bicycle parking and storage capacity for at least 90% of the new buildings and buildings undergoing major renovations in the project at the levels described below. The total building square

footage of any excluded buildings may not be more than 10% of the total building square footage of new buildings and buildings undergoing major renovations in the project.

a. **Multiunit residential.** Provide at least one secure, enclosed bicycle storage space per occupant for 30% of the *planned occupancy* but no fewer than one per unit.
b. **Retail.** Provide at least one secure, enclosed bicycle storage space per new retail worker for 5% of retail worker planned occupancy. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.
c. **Nonresidential other than retail.** Provide at least one secure, enclosed bicycle storage space per new occupant for 5% of planned occupancy. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.

Bicycle storage areas must be locked, within 100 feet of a building entry, and easily accessible to residents and/or workers. If the building has multiple main entries, bicycle racks must be proportionally dispersed within 100 feet of each. All storage must be safe, clearly visible from a main entry, served with night lighting, and protected from damage by nearby vehicles. Bicycle racks must not block the pedestrian path of travel or inhibit universal accessibility.

Provide informational signage on using the storage facilities.

Shower and changing facility requirements may be met by providing the equivalent of free access to on-site health club shower facilities, if the health club can be accessed without going outsideAND

Provide carpool and/or shared-use vehicle parking spaces equivalent to 10% of the total automobile parking for each nonresidential and mixed-use building on the site. Signage indicating such parking spots must be provided, and the parking spots must be within 200 feet of entrances to the buildings served.

NPD CREDIT: STREET NETWORK

Intent

To conserve land and promote multimodal transportation by encouraging development within existing communities that have high levels of internal connectivity and are well connected to the larger community. To improve public health by encouraging daily physical activity and reducing motor vehicle emissions.

Requirements

Design or locate the project such that a through-street or nonmotorized right-of-way intersects or terminates at the *project boundary* at least every 400 feet or at existing abutting street intervals and intersections, whichever is the shorter distance. Include a pedestrian or bicycle through-connection in at least 90% of any new *culs-de-sac.* This does not apply to portions of the boundary where connections cannot be made because of physical obstacles, such as prior platting of property, construction of existing buildings or other barriers, slopes over 15%, *wetlands* and *water bodies,* railroad and utility rights-of-way, existing limited-access motor vehicle rights-of-way, and parks and dedicated open space.

AND

Locate or design the project such that its internal *connectivity* falls within one of the ranges listed in Table 1. If the project has no internal streets, the connectivity within a ¼ mile distance of the project boundary must be used.

Table 1. Points for connectivity

Street intersections per square mile	Points
300–400	
> 400	

All streets and sidewalks that are counted toward the connectivity requirement must be available for general public use and not gated. Gated areas are not considered available for public use, with the exception of education and health care campuses, and military bases where gates are used for security purposes.

NPD CREDIT: TRANSIT FACILITIES

Intent

To encourage transit use and reduce vehicle miles traveled by providing safe, convenient, and comfortable transit waiting areas and safe and secure bicycle storage.

Requirements

Work with the transit agency or agencies serving the *project* to identify transit stop locations within or bordering the *project boundary* where transit agency-approved shelters and any other agency-required improvements, including bicycle racks, will be installed no later than construction of 50% of total project square footage. At those locations, install approved shelters and any required improvements, or provide funding to the transit agency for their installation. Shelters must be covered, be at least partially enclosed to buffer wind and rain, and have seating and illumination. Any required bicycle racks must have a two-point support system for locking the frame and wheels and be securely affixed to the ground or a building.

Work with the transit agency or agencies serving the project to identify locations within and bordering the project boundary where the agency determines that transit stops will be warranted within two years of project completion, either because of increased ridership on *existing* service resulting from the project or because of planned future transit. At those locations, reserve space for transit shelters and any required improvements, including bicycle racks. In lieu of or in addition to new stops, this requirement can be satisfied with a commitment from the transit agency to provide increased service to the transit stops that will have been installed at the time of 50% *build-out.*

Work with the transit agency or agencies serving the project to provide kiosks, bulletin boards, and/or signs that display transit schedules and route information at each public transit stop within and bordering the project.

NPD CREDIT: TRANSPORTATION DEMAND MANAGEMENT

Intent

To reduce energy consumption, pollution from motor vehicles, and adverse public health effects by encouraging multimodal travel.

Requirements

Achieve at least two of the following options.

Earn 1 point for every two options, for a maximum of 2 points. For the purposes of this credit, *existing* buildings and their occupants are exempt from the requirements.

OPTION 1. TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Create and implement a comprehensive transportation demand management (TDM) program for the *project* that reduces weekday peak-period motor vehicle trips by at least 20% compared with a baseline case, and fund the program for a minimum of three years following *build-out* of the project. The TDM program must be prepared by a qualified transportation professional. Any trip reduction effects of Options 2, 3, 4, or 5 may not be included when calculating the 20% threshold.

OR

OPTION 2. TRANSIT PASSES

Provide transit passes valid for at least one year, subsidized to be half of regular price or cheaper, to each occupant locating within the project during the first three years of project occupancy (or longer). Publicize the availability of subsidized transit passes to project occupants;

OR

OPTION 3. DEVELOPER-SPONSORED TRANSIT

Provide year-round, *developer*-sponsored private transit service (with vans, shuttles, buses) from at least one central point in the project to other major transit facilities, or other destinations such as a retail or *employment center,* with service no less frequent than 45 daily weekday trips and 30 daily weekend trips. The service must begin by the time the project total square footage is 20% occupied and must be guaranteed for at least three years beyond project build-out. Twenty percent occupancy is defined as residents living in 20% of the *dwelling units* and/or employees working in 20% of the total nonresidential square footage.

Provide transit stop shelters and bicycle racks adequate to meet projected demand but no less than one shelter and one bicycle rack at each transit stop. Shelters must be covered, be at least partially enclosed to buffer wind and rain, and have seating and illumination. Bicycle racks must have a two-point support system for locking the frame and wheels and must be securely affixed to the ground or a building.

OR

OPTION 4. VEHICLE SHARING

Locate the project such that 50% of the dwelling units and nonresidential building entrances are within a ¼-mile *walk distance* of at least one vehicle in a vehicle-sharing program, as specified below, depending on project size.

a. If the project has fewer than 100 dwelling units and/or employees, provide one vehicle.
b. If the project has more than 100 dwelling units and/or employees and has a minimum transit service of 60 daily weekday trips and 40 daily weekend trips, at least one additional vehicle and parking space for every 100 dwelling units and/or employees must be available.
c. If the project has more than 100 dwelling units and/or employees but does not have transit service at the frequencies specified above, at least one additional vehicle and parking space for every 200 dwelling units and/or employees must be available.

For each vehicle, dedicate one parking space accessible to vehicle-sharing members. Through signage and other means, publicize to project occupants the availability and benefits of the vehicle-sharing program. Where new vehicle locations are created, a vehicle sharing program must begin by the time the project total square footage is 20% occupied; commit to providing vehicles to the locations for at least two years. Twenty percent occupancy is defined as residents living in 20% of the project dwelling units and/or employees working in 20% of the total nonresidential square footage of the project.

OR

OPTION 5. UNBUNDLING OF PARKING

For 90% of *multiunit residential* units and/or nonresidential square footage, the associated parking spaces must be sold or rented separately from the dwelling units or nonresidential square footage.

NPD Credit: Access to Civic and Public Space

Intent

To provide open space close to work and home that enhances community participation and improves public health.

Requirements

Locate or design the *project* such that a civic or passive-use space, such as a square, *park, paseo,* or *plaza,* at least 1/6 acre in area lies within a ¼-mile *walk distance* of 90% of planned and *existing dwelling units* and nonresidential building entrances. Spaces less than 1 acre must have a proportion no narrower than 1 unit of width to 4 units of length.

AND

For projects larger than 7 acres, locate or design the project such that the median size of civic or passive-use spaces within or contiguous to the project is at least 1/2 acre.

NPD CREDIT: ACCESS TO RECREATION FACILITIES

Intent

To enhance community participation and improve public health by providing recreational facilities close to work and home that facilitate physical activity and social networking.

Requirements

Locate or design the *project* so that a publicly accessible outdoor recreation facility at least 1 acre in area, or a publicly accessible indoor recreational facility of at least 25,000 square feet, lies within a ½-mile *walk distance* of 90% of new and *existing dwelling units* and nonresidential building entrances. Outdoor recreation facilities must consist of physical improvements and may include “tot lots,” swimming pools, and sports fields, such as baseball diamonds.

NPD CREDIT: VISITABILITY AND UNIVERSAL DESIGN

Intent

To increase the proportion of areas usable by a wide spectrum of people, regardless of age or ability.

Requirements

CASE 1. Projects with Dwelling Units

Each new project dwelling unit of the following residential building types must be designed to the applicable requirements specified.

Single dwelling unit buildings. Design a minimum of 20% of the dwelling units (and not less than one) in accordance with ICC/ANSI A117.1, Type C, Visitable Unit, each of which has an open-space plan for primary functions (an area for cooking, eating, and social gathering), as well as a sleeping area and a full bathroom. If a project has both attached and detached single dwelling unit buildings, the requirements apply to each type separately.

Multiunit building with two or three dwelling units. Design a minimum of 20% of the dwelling units (and not less than one) in accordance with ICC/ANSI A117.1, Type C, Visitable Unit, each of which has a kitchen, dining area, living area, full bathroom, and bedroom on the accessible level. If a project has buildings with both two and three dwelling units, the requirements apply to each type separately.

Multiunit buildings with four or more dwelling units. This category includes mixed-use buildings with dwelling units. Design a minimum of 20% of the dwelling units (and not less than one) to incorporate the universal design requirements of Options 1, 2, or 3; or, comply with Case 2.

OPTION 1

Throughout the home, include at least five of the following universal design features to facilitate universal function, access, and user ability:

- easy-to-grip lever door handles;
- easy-to-grip cabinet and drawer loop handles;
- easy-to-grip locking mechanisms on doors and windows;
- easy-to-grip single-lever faucet handles;
- easy-touch rocker or hands-free switches;
- motion-detector lighting at entrance, in hallways and stairwells, and in closets, and motion-detector light switches in garages, utility spaces, and basements;
- large, high-contrast print for controls, signals, and the house or unit numbers;
- a built-in shelf, bench, or table with knee space below, located outside the entry door with weather protection overhead, such as porch or stoop with roof, awning, or other overhead covering;
- a minimum 32-inch clear door opening width for all doorways;
- tread at the entrance, on stairs, and other areas where slipping is common, with color contrast difference between stair treads and risers; and

interior floor surfaces (e.g., low-pile carpets, hard-surface flooring) that provide easy passage for a wheelchair or walker, with color contrast between floor surfaces and trim; no carpet is permitted in a kitchen, bathroom, or other wet areas of the dwelling unit.OR

OPTION 2

On the main floor of the home (or on another floor, if an elevator or stair lift is provided), provide a kitchen with hard-surface flooring, plumbing with single-lever controls, a 5-foot turning radius, and at least four of the following universal design features to facilitate universal function, access, and usability:

- variable-height (28- to 42-inch) or adjustable work surfaces, such as countertops, sinks, and/or cooktops;
- clear knee space under sink and cooktops (this requirement can be met by installing removable base cabinets or fold-back or self-storing doors), cooktops and ranges with front or side-mounted controls, and wall-mounted ovens at a height to accommodate a seated adult;
- a toe kick area at the base of lower cabinets with a minimum height of 9 inches, and full-extension drawers and shelves in at least half (by volume) of the cabinets;
- contrasting color treatment between countertops, front edges, and floor;
- adjustable-height shelves in wall cabinets; and
- glare-free task lighting.

OR

OPTION 3

On the main floor of the building (or on another floor, if an elevator or stair lift is provided), include all of the following:

In at least one accessible bedroom,

- Size the room to accommodate a twin bed with a 5-foot turning radius around the bed.
- Install a clothes closet with a 32-inch clear opening with adjustable-height closet rods and shelves.

In at least one full bathroom on the same floor as the bedroom,

- Provide adequate maneuvering space with a 30-by-48-inch clear floor space at each fixture.
- Center the toilet 18 inches from any side wall, cabinet, or tub, and allow a 3-foot clear space in front.
- Install broad blocking in walls around toilet, tub, and/or shower for future placement and relocation of grab bars
- Provide knee space under the lavatory (this requirement may be met by installing removable base cabinets or fold-back or self-storing doors).
- Install a long mirror whose bottom is no more than 36 inches above the finished floor and whose top is at least 72 inches high.

In addition, all bathrooms must have hard-surface flooring, all plumbing fixtures must have single-lever controls, and tubs or showers must have hand-held showerheads.

OR

CASE 2. Projects with Noncompliant Public Rights-of-Way or Accessible Travel Routes

For projects that have no residential components, or residential components that are not within the scope of Option 1, but have public rights-of-way or other publicly accessible travel routes within the project that are not in compliance with Americans with Disabilities Act (for private sector and local and state government facilities) or the Architectural Barriers Act (for federally funded facilities), design,

construct, and/or retrofit 100% of the rights-of-way and/or travel routes in accordance with the ADA-ABA Accessibility Guidelines, as applicable.

NPD CREDIT: COMMUNITY OUTREACH AND INVOLVEMENT

Intent

To encourage responsiveness to community needs by involving the people who live or work in the community in *project* design and planning and in decisions about how the project should be improved or changed over time.

Requirements

OPTION 1. COMMUNITY OUTREACH

Meet with adjacent property owners, residents, business owners, and workers; local planning and community development officials; and any current residents or workers at the project site to solicit and document their input on the proposed project prior to commencing a design.

Work directly with community associations and/or the local government to advertise an open community meeting, other than an official public hearing, to generate comments on project design from the beginning.

Host an open community meeting, other than an official public hearing, to solicit and document public input on the proposed project at the beginning of project design.

Modify the project's conceptual design as a direct result of community input, or if modifications are not made, explain why community input did not generate design modifications.

Establish ongoing means for communication between the *developer* and the community throughout the design and construction phases and, in cases where the developer maintains any control during the post-construction phase.

OR

OPTION 2. CHARRETTE

Comply with Option 1 and conduct a design charrette or interactive workshop of at least two days and open to the public that includes, at a minimum, participation by a representative group of nearby property owners, residents, business owners, and workers in the preparation of conceptual project plans and drawings.

OR

OPTION 3. LOCAL ENDORSEMENT PURSUANT TO EVALUATION PROGRAM

Comply with Option 1 and obtain an endorsement from an ongoing local or regional nongovernmental program that systematically reviews and endorses smart growth development projects under a rating or jury system.

NPD CREDIT: LOCAL FOOD PRODUCTION

Intent

To promote the environmental and economic benefits of community-based food production and improve nutrition through increased access to fresh produce.

Requirements

FOR ALL PROJECTS

Establish *covenants, conditions, and restrictions* (CC&Rs) or other forms of deed restrictions that do not prohibit greenhouses or the growing of produce in *project* areas, including any portion of residential front, rear, or side yards and balconies, patios, or rooftops. Greenhouses but not gardens may be prohibited in front yards that face the *street.*

AND

OPTION 1. NEIGHBORHOOD FARMS AND GARDENS

Dedicate permanent and viable growing space or related facilities (such as greenhouses) within the project as specified in Table 1 (exclusive of *existing* dwellings). Provide solar access, fencing, watering systems, garden bed enhancements (such as raised beds), secure storage space for tools, and pedestrian access for these spaces. Ensure that the spaces are owned and managed by an entity that includes occupants of the project in its decision making, such as a community group, homeowners' association, or public body.

Table 1. Minimum garden space, by project density

Project density (DU/acre)	*Growing space (sf/DU)*
> 7 and ≤14	200
> 14 and ≤ 22	100
> 22 and ≤ 28	80
> 28 and ≤ 35	70
> 35	60

Du = dwelling unit; sf = square feet.

An established community garden outside the *project boundary* but within a ½-mile *walk distance* of the project's geographic center can satisfy this option if the garden otherwise meets all the option requirements.

OR

OPTION 2. COMMUNITY-SUPPORTED AGRICULTURE

Purchase shares in a *community-supported agriculture* (CSA) program located within 150 miles of the project site for at least 80% of *dwelling units* within the project (exclusive of existing dwelling units) for two years, beginning with each dwelling unit's occupancy until the 80% threshold is reached. Shares must be delivered to a point within 1/2 mile of the project's geographic center on a regular schedule not less than twice per month at least four months of the year.

OR

OPTION 3. PROXIMITY TO FARMERS' MARKET

Locate the project's geographic center within a 1/2-mile walk distance of an existing or planned farmers' market that is open or will operate at least once weekly for at least five months annually. Farmers' market vendors may sell only items grown within 150 miles of the project site. A planned farmers' market must have firm commitments from farmers and vendors that the market will meet all the above requirements and be in full operation by the time of 50% occupancy of the project's total square footage.

NPD CREDIT: TREE-LINED AND SHADED STREETS

Intent

To encourage walking, bicycling, and transit use and discourage speeding. To reduce urban heat island effects, improve air quality, increase evapotranspiration, and reduce cooling loads in buildings.

Requirements

OPTION 1. TREE-LINED STREETS

Design and build the *project* to provide street trees on both sides of at least 60% of new and *existing streets* within the project and on the project side of bordering streets, between the vehicle travel way and walkway, at intervals averaging no more than 40 feet (excluding driveways and utility vaults).

AND/OR

OPTION 2. SHADED STREETS

Provide shade from trees or other structures over at least 40% of the length of sidewalks on streets within or contiguous to the project. Trees must provide shade within 10 years of landscape installation. Use the estimated crown diameter (the width of the shade if the sun is directly above the tree) to calculate the shaded area.

AND

FOR ALL PROJECTS WITH STREET TREE PLANTINGS

Obtain a registered landscape architect's determination that planting details are appropriate to growing healthy trees, taking into account tree species, root medium, and width and soil volume of planter strips or wells, and that the selected tree species are not considered *invasive* in the project context according to USDA or the state agricultural extension service.

NPD CREDIT: NEIGHBORHOOD SCHOOLS

Intent

To promote community interaction and engagement by integrating *schools* into the neighborhood. To improve students' health by encouraging walking and bicycling to school.

Requirements

Include in the *project* a residential component that constitutes at least 30% of the project's total building square footage, and locate or design the project such that at least 50% of the *dwelling units* are within a ½-mile *walk distance* of an *existing* or new elementary or middle school building entrance or within a 1-mile walk distance of an existing or new high school building entrance. For any new school, the school district or equivalent organization must commit in a legally binding warrant that the school will be open by the time of occupancy of 50% of the project dwelling units.

Streets within or bordering the *project boundary* that lead from dwelling units to the school site must have a complete network of sidewalks on both sides and either bicycle lanes or traffic control and calming measures. If the school is planned as part of the project, it must be designed such that pedestrians and cyclists can easily reach building entrances without crossing bus zones, parking entrances, and student drop-off areas.

New school campuses must not exceed the following acreage limits:

- high school, 15 acres;
- middle school, 10 acres; and
- elementary school, 5 acres.

Schools combining grade levels from more than one category may use the grade level with the higher allowable acreage.

Facilities on the school site (e.g., athletic fields, playgrounds, multipurpose interior spaces) for which there is a formal joint-use agreement with another entity may be deducted from the total site area of the school.

GREEN INFRASTRUCTURE & BUILDINGS (GIB)

GIB PREREQUISITE: CERTIFIED GREEN BUILDING
Required

Intent
To encourage the design, construction, and retrofit of buildings using green building practices.

Requirements
Design, construct, or retrofit one whole building within the project to be certified through LEED for New Construction, LEED for Existing Buildings: Operations & Maintenance, LEED for Homes, LEED for Schools, LEED for Retail: New Construction, or LEED for Core & Shell (with at least 75% of the floor area certified under LEED for Commercial Interiors or LEED for Retail: Commercial Interiors), or through a green building rating system requiring review by independent, impartial, third-party certifying bodies as defined by ISO/IEC Guide 65 and, when subsequently available, ISO/IEC 17065.

GIB PREREQUISITE: MINIMUM BUILDING ENERGY EFFICIENCY Required

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this prerequisite under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To encourage the design and construction of energy-efficient buildings that reduce air, water, and land pollution and adverse environmental effects from energy production and consumption.

Requirements

The following requirements apply to 90% of the building floor area (rounded up to the next whole building) of all nonresidential buildings, mixed-use buildings, and multiunit residential buildings four stories or more constructed as part of the project or undergoing major renovations as part of the project.

Each counted building must comply with the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda)[1]. Additionally, each building must comply with one of the following efficiency options:

OPTION1. Energy model

Demonstrate an average percentage improvement of 10% for new buildings, 7% for major building renovations or 6% for core and shell buildings over ANSI/ASHRAE/IESNA Standard 90.1-2010. Multiple buildings may be grouped into a single energy model as long as the building type (new construction, major renovation, or core and shell) is consistent for all buildings included in the energy model OR an average percentage improvement of 10% is demonstrated for the entire energy model.

Cost Savings. Demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline and proposed building performance according to Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2010 (with errata but without addenda[2]) using a computer simulation model for the whole building project. If multiple buildings are grouped into a single energy model, follow the LEED for Neighborhood Development Energy Modeling Guidance in addition to Appendix G.

Source Energy Use Intensity (EUI) Reduction. Demonstrate a percentage improvement in the proposed building source energy compared to the baseline building performance. Calculate the baseline and proposed building source energy by converting the energy consumption for each energy type calculated in step 1 to source energy using national average source energy conversion factors for each energy type.

Calculate the average of Step 1 and 2 to determine the percentage improvement.

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[1] Project teams wishing to use ASHRAE approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

OPTION 2. ASHRAE Advanced Energy Design Guide

Comply with HVAC requirements applicable to the each building, including HVAC, including equipment efficiency, economizers, ventilation, ducts and dampers of the appropriate 50% AEDG.

Small/Medium Office Buildings

- Less than 20,000 square feet.
- At least 80%, office occupancy.
- Unitary HVAC systems.

Small Retail Buildings

- Less than 20,000 square feet.
- At least 80%, retail occupancy.
- Unitary HVAC systems;

Small Hospital and Healthcare Facilities

- Less than 90,000 square feet.
- At least 80%, healthcare and medical office occupancy.

Highway Lodging (2009)

- Less than 80 rooms,
- Four stories or fewer
- Unitary HVAC systems.

Medium Box Retail

Grocery/Supermarket

K-12 Schools

Small Warehouses and Self-Storage Buildings

- Less than 50,000 square feet
- At least 80%, warehouse or self –storage occupancy,
- Unitary HVAC systems

OPTION 3. Advanced Buildings Core Performance Guide

For buildings less than 100,000 square feet, comply with Section 1, Design Process Strategies, and Section 2, Core Performance Requirements, of the Advanced Buildings Core Performance Guide.

AND

For new *single-family residential* buildings and new multiunit residential buildings three stories or fewer, 90% of the buildings must meet ENERGY STAR or equivalent criteria. Projects may demonstrate compliance with ENERGY STAR Version 3 criteria through the prescriptive requirements of a Builder Option Package, the *Home Energy Rating System* (HERS) index, or a combination of the two.

GIB PREREQUISITE: MINIMUM BUILDING WATER EFFICIENCY
Required

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this prerequisite under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent
To conserve natural water resources and reduce the burden on water supply and wastewater systems by increasing the water efficiency of fixtures and fittings.

Requirements
CASE 1. Nonresidential Buildings, Mixed-Use Buildings, and Multifamily Residential Buildings Four Stories or More

For new buildings and buildings undergoing major renovations as part of the *project*, reduce indoor water usage by an average of 20% from baseline buildings.

Calculate the baseline water consumption using estimated occupant usage and the volumes and flow rates shown in Table 1.[3] Include only the following fixtures and fittings (as applicable to the project scope): toilets (water closets), urinals, lavatory faucets, showers, and kitchen sink faucets.

The water efficiency threshold is calculated as a weighted average of water usage for the buildings constructed as part of the project based on their conditioned square footage. Project teams may also use the alternative calculations in the LEED for Multiple Buildings and On-Campus Building Application Guide to show compliance.

Table 1. **Baseline water consumption of fixtures and fittings**

Fixtures and Fittings	**Current Baseline**
Toilets (water closets)	1.6 gpf*
Urinals	1.0 gpf
Public lavatory (restroom) faucets	2.2 gpm at 60 psi, private applications only (hotel or motel guest rooms, hospital patient rooms) 0.5 gpm at 60 psi** all others except private applications 0.25 gallons per cycle for metering faucets
Residential lavatory (bathroom) faucets	2.2 gpm at 60 psi
Residential kitchen faucet	

[3] Tables adapted from information developed and summarized by the U.S. Environmental Protection Agency (EPA) Office of Water based on requirements of the Energy Policy Act (EPAct) of 1992 and subsequent rulings by the Department of Energy, requirements of the EPAct of 2005, and the plumbing code requirements as stated in the 2009 editions of the Uniform Plumbing Code or International Plumbing Code and Uniform Plumbing Code pertaining to fixture performance.

Showerheads	2.5 gpm at 80 (psi) per shower stall****

* EPAct 1992 standard for toilets (water closets) applies to both commercial and residential models.

** In addition to EPAct requirements, the American Society of Mechanical Engineers ANSI national standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1/CSA B125.1–2005). This maximum has been incorporated into the 2009 editions of the International Plumbing Code and Uniform Plumbing Code.

*** EPAct 1992 standard for toilets (water closets) applies to both commercial and residential models.

**** The total allowable flow rate from all flowing showerheads at any given time, including rain systems, waterfalls, bodysprays, bodyspas, and jets, must be limited to the allowable showerhead flow rate specified above (2.5 gpm) per shower compartment (stall), where the floor area of the shower compartment is less than 1,500 square inches. For each floor area of 1,500 square inches, assume an additional showerhead with total allowable flow rate from all flowing devices equal to or less than the allowable flow rate as specified above. Exception: Showers that emit recirculated nonpotable water originating from within the shower compartment while operating may exceed the maximum, provided the total potable water flow does not exceed the flow rate specified above.

gpf = gallons per flush

gpm = gallons per minute

psi = pounds per square inch

CASE 2. New Single-Family Residential Buildings and New Multiunit Residential Buildings Three Stories or Fewer

90% of residential buildings must use a combination of fixtures that would earn X points under LEED for Homes 2012 Credit, Indoor Water Use.

GIB PREREQUISITE: CONSTRUCTION ACTIVITY POLLUTION PREVENTION Required

Intent

To reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust.

Requirements

Create and implement an erosion and sedimentation control plan for all new construction activities associated with the project. The plan must incorporate practices such as phasing, seeding, grading, mulching, filter socks, stabilization of site entrances, preservation of existing vegetation, and other best management practices (BMPs) to control erosion and sedimentation in runoff from the entire project site during construction. The plan must list the BMPs employed and describe how they accomplish the following:

- prevent loss of soil during construction by stormwater runoff and/or wind erosion, including stockpiling of topsoil for reuse;
- prevent sedimentation of any affected stormwater conveyance systems or receiving streams; and
- prevent polluting the air with dust and particulate matter.

The erosion and sedimentation control plan must describe how the project team will do the following:

a. preserve vegetation and mark clearing limits;
b. establish and delineate construction access;
c. control flow rates;
d. install sediment controls;
e. stabilize soils;
f. protect slopes;
g. protect drain inlets;
h. stabilize channels and outlets;
i. control pollutants;
j. control dewatering;
k. maintain the BMPs; and
l. manage the erosion and sedimentation control plan.

The BMPs must be selected from the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington, Volume II, Construction Stormwater Pollution Prevention* (2005 edition), or a locally approved equivalent, whichever is more stringent, and must comply with all federal, state, and local erosion and sedimentation control regulations.

GIB CREDIT: CERTIFIED GREEN BUILDINGS

Intent

To encourage the design, construction, and retrofit of buildings using green building practices.

Requirements

OPTION 1. Projects with 10 or Fewer Habitable Buildings

Design, construct, or retrofit one building as part of the project, beyond the prerequisite, to be certified under one of the following LEED green building rating systems: LEED for New Construction, LEED for Existing Buildings, LEED for Homes, LEED for Schools, LEED for Retail: New Construction, or LEED for Core & Shell (with at least 75% of the floor area certified under LEED for Commercial Interiors or LEED for Retail: Commercial Interiors) or through a green building rating system requiring review by independent, impartial, third-party certifying bodies as defined by ISO/IEC Guide 65 and, when subsequently available, ISO/IEC 17065. Additional points (up to 5) may be earned for each additional certified building that is part of the project.

OR

OPTION 2. Projects of All Sizes

Design, construct, or retrofit a percentage of the total project building square footage, beyond the prerequisite requirement, to be certified under one of the LEED green building rating systems listed above or through a green building rating system requiring review by independent, impartial, third-party certifying bodies as defined by ISO/IEC Guide 65 and, when subsequently available, ISO/IEC 17065.

Table 1. Points for green building certification

Percentage of square footage certified	Points
≥10% and <20%	
≥20% and <30%	
≥30% and <40%	
≥40% and < 50%	
≥50%	

AND

FOR ALL PROJECTS

Detached accessory dwelling units must be counted as separate buildings. Accessory dwellings attached to a main building are not counted separately.

GIB CREDIT: BUILDING ENERGY EFFICIENCY

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To encourage the design and construction of energy-efficient buildings that reduce air, water, and land pollution and adverse environmental effects from energy production and consumption.

Requirements

The following requirements apply to 90% of the building floor area (rounded up to the next whole building) of all nonresidential buildings, mixed-use buildings, and *multiunit residential* buildings four stories or more constructed as part of the *project* or undergoing major renovations as part of the project.

Each counted building must comply with one of the following efficiency options:

OPTION 1. Energy model

New buildings must demonstrate an average percentage improvement of 18% (1 point) or 26% (2 points) over ANSI/ASHRAE/IESNA Standard 90.1–2010[4] (with errata but without addenda). Buildings undergoing major renovations as part of the project must demonstrate an average percentage improvement of 14% (1 point) or 22% (2 points) . Core and shell buildings must demonstrate an average percentage improvement of 15% (1 point) or 19% (2 points). Multiple buildings may be grouped into a single energy model as long as the building type (new construction, major renovation, or core and shell) is consistent for all buildings included in the energy model OR an average percentage improvement of 18% (1 point) or 26% (2 points) is demonstrated for the entire energy model. To determine percentage improvement, follow the method outlined in GIB Prerequisite 2: Minimum Building Energy Efficiency.

OPTION 2. ASHRAE Advanced Energy Design Guide

To be eligible for Option B, project must comply with some or all of the recommended measures of the ASHRAE 50% Advanced Energy Design Guide applicable to the project, as outlined in GIB Prerequisite 2, and subject to the stated scope of each of the guides. Note: Cold dark shells are ineligible for Option B.

AND

Implement and document compliance with all applicable recommendations and standards contained in "Chapter 3: Recommendations by Climate" and for the appropriate ASHRAE Advanced Energy Design Guide for the climate zone in which the building is located:

For K-12 school projects

Path 1: Building Envelope, Opaque: Roofs, Walls, Floors, Slabs, and Doors - (1 point)

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[4] Project teams wishing to use ASHRAE-approved addenda for the purposes of this credit may do so at their discretion. Addenda must be applied consistently across all LEED credits.

Path 2: Building Envelope, Glazing: Vertical Fenestration and Skylights - (1 point)
Path 3.1: Interior Lighting, **Daylighted**, including interior finishes - (2 points)
or
Path 3.2: Interior Lighting, **Non-Daylighted**, including interior finishes– (1 point)

For retail projects

Path 1: Building Envelope, Opaque: Roofs, Walls, Floors, Slabs, and Doors - (1 point)
Path 2: Building Envelope, Glazing: Vertical Fenestration and Skylights - (1 point)
Path 3: Interior Lighting, including interior finishes - (1 point)
Path 4: Additional Interior Lighting for Sales Floor – (1 point)

For all other project types

Path 1: Building Envelope, Opaque: Roofs, Walls, Floors, Slabs, and Doors - (1 point)
Path 2: Building Envelope, Glazing: Vertical Fenestration and Skylights - (1 point)
Path 3: Interior Lighting, including daylighting and interior finishes - (2 points)

Core and Shell projects do not need to address XX Sections to meet the requirements of Option B (sections related Plug Loads and Appliance Efficiency).

OPTION 3. Advanced Buildings™ Core Performance™ Guide

Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute.

To be eligible for Option C, the building must be less than 100,000 square feet.

Note: Cold dark shells, K-12 schools, healthcare, warehouse or laboratory projects are ineligible for Option C.

Path 1: Enhanced Performance Strategies Lighting and Plug Loads: Comply with the following measures as detailed in Section 3: Enhanced Performance of the Advanced Buildings™ Core Performance™ Guide. (2 points)

3.2 Daylighting and Controls
3.3 Additional Lighting Power Reductions
3.4 Plug Loads/Appliance Efficiency

Path 2: Enhanced Performance Strategies HVAC Systems: Comply with the following measures as detailed in Section 3: Enhanced Performance of the Advanced Buildings™ Core Performance™ Guide. (2 points)

3.5 Supply Air Temperature Reset (VAV)
3.9 Premium Economizer Performance
3.10 Variable Speed Control

AND

For new *single-family residential* buildings and new multiunit residential buildings three stories or fewer, 90% of the buildings must reduce absolute estimated annual energy usage compared to the LEED Index Target for each building by 10%.

GIB CREDIT: BUILDING WATER EFFICIENCY

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To conserve natural water resources and reduce the burden on water supply and wastewater systems by increasing water efficiency.

Requirements

CASE 1. Nonresidential Buildings, Mixed-Use Buildings, and Multifamily Residential Buildings Four Stories or More

For new buildings and buildings undergoing major renovations as part of the project, reduce indoor water usage by an average 40% from baseline buildings. Calculate the baseline water consumption using estimated occupant usage and the volumes and flow rates shown in Table 1.[5] Include only the following fixtures and fittings (as applicable to the project scope): toilets (water closets), urinals, lavatory faucets, showers, and kitchen sink faucets.

Projects may also follow the LEED for Multiple Buildings and On-Campus Building Application Guide alternative calculation methodology to show compliance with this credit.

Table 1. **Baseline water consumption of fixtures and fittings**

Fixtures and Fittings	**Current Baseline**
Toilets (water closets)	1.6 gpf*
Urinals	1.0 gpf
Public lavatory (restroom) faucets	2.2 gpm at 60 psi, private applications only (hotel or motel guest rooms, hospital patient rooms) 0.5 gpm at 60 psi** all others except private applications 0.25 gallons per cycle for metering faucets
Residential lavatory (bathroom) faucets	2.2 gpm at 60 psi
Residential kitchen faucet	
Showerheads	2.5 gpm at 80 (psi) per shower stall****

[5] Tables adapted from information developed and summarized by the U.S. Environmental Protection Agency (EPA) Office of Water based on requirements of the Energy Policy Act (EPAct) of 1992 and subsequent rulings by the Department of Energy, requirements of the EPAct of 2005, and the plumbing code requirements as stated in the 2009 editions of the Uniform Plumbing Code or International Plumbing Code and Uniform Plumbing Code pertaining to fixture performance.

* EPAct 1992 standard for toilets (water closets) applies to both commercial and residential models.

** In addition to EPAct requirements, the American Society of Mechanical Engineers ANSI national standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1/CSA B125.1–2005). This maximum has been incorporated into the 2009 editions of the International Plumbing Code and Uniform Plumbing Code.

*** EPAct 1992 standard for toilets (water closets) applies to both commercial and residential models.

**** The total allowable flow rate from all flowing showerheads at any given time, including rain systems, waterfalls, bodysprays, bodyspas, and jets, must be limited to the allowable showerhead flow rate specified above (2.5 gpm) per shower compartment (stall), where the floor area of the shower compartment is less than 1,500 square inches. For each floor area of 1,500 square inches, assume an additional showerhead with total allowable flow rate from all flowing devices equal to or less than the allowable flow rate as specified above. Exception: Showers that emit recirculated nonpotable water originating from within the shower compartment while operating may exceed the maximum, provided the total potable water flow does not exceed the flow rate specified above.

gpf = gallons per flush

gpm = gallons per minute

psi = pounds per square inch

AND

CASE 2. New Single-Family Residential Buildings and New Multiunit Residential Buildings Three Stories or Fewer

90% of buildings must use a combination of fixtures that would earn points under LEED for Homes 2012 Credit , Indoor Water Use.

GIB CREDIT: LANDSCAPE WATER USE REDUCTION

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

Reduce water consumption from landscape irrigation.

Requirements

This credit is available to projects with a minimum vegetated area that is 3% or more of the total project site area.

OPTION 1. NO IRRIGATION NEEDED

Projects with no new or existing landscape irrigation requirements automatically meet the credit requirements.

OR

OPTION 2. REDUCE IRRIGATION

Design landscape and irrigation systems, or use reclaimed, recycled or treated non-potable water to reduce irrigation water use 30% below the landscape water allowance (LWA) for the project, using the U.S. Environmental Protection Agency's WaterSense Water Budget Tool.

Reductions must be attributed to any one or a combination of the following strategies:

- Selection of plant species by hydrozone, as indicated in the Water Budget Tool;
- Irrigation efficiency: distribution uniformity of the irrigation system based on materials by hydrozone, as indicated in the Water Budget Tool;
- Irrigation system is designed and installed or audited by an EPA WaterSense Irrigation Partner;;
- Installation of smart scheduling technology, either a soil moisture sensor control system or a weather-based irrigation control system, limited to a savings of 20%;
- Use of captured rainwater;
- Use of reclaimed water*;*
- Use of water treated and conveyed by a public agency specifically for nonpotable uses (naturally occurring surface water bodies, such as streams and rivers, and groundwater, such as well water, are excluded); and/or
- use of groundwater seepage that is pumped away from the immediate vicinity of building slabs and foundations, provided this strategy does not affect site stormwater management systems.
- use of other nonpotable water sources, such as stormwater, air-conditioning condensate, and foundation drain water.

GIB CREDIT: EXISTING BUILDING REUSE

Intent

To extend the life cycle of *existing* buildings to conserve resources, reduce waste, and reduce environmental harm from materials manufacturing and transport for new buildings.

Requirements

Reuse the following percentages of existing *habitable building* stock, based on surface area, whichever is greater:

- 50% of one existing building structure (including structural floor and roof decking) and envelope (including exterior skin and framing but excluding window assemblies and nonstructural roofing material).
- 20% of the total existing building stock (including structure and envelope, as defined above).

Hazardous materials that are remediated as a part of the *project* scope must be excluded from the calculations.

FOR ALL PROJECTS

Do not demolish any *historic buildings,* or portions thereof, or alter any *cultural landscapes* as part of the project.

An exception is granted only with approval from an appropriate review body. For buildings listed locally, approval must be granted by the local historic preservation review board, or the equivalent. For buildings listed in a state register or in the National Register of Historic Places, approval must appear in a programmatic agreement with the State Historic Preservation Office.

GIB CREDIT: HISTORIC RESOURCE PRESERVATION AND ADAPTIVE USE

Intent

To respect local landmarks and conserve material and cultural resources by encouraging the preservation and adaptive use of historic buildings and cultural landscapes.

Requirements

This credit is available to projects with at least one historic building or cultural landscape on the *project* site.

Do not demolish any historic buildings, or portions thereof, or alter any cultural landscapes as part of the project.

An exception is granted only with approval from an appropriate review body. For buildings or landscapes listed locally, approval must be granted by the local historic preservation review board, or equivalent. For buildings or landscapes listed in a state register or in the National Register of Historic Places, approval must appear in a programmatic agreement with the State Historic Preservation Office.

If any historic building in the project site is to be rehabilitated, rehabilitate in accordance with local review or federal standards for rehabilitation, whichever is more restrictive, using one of the following approaches:

- Obtain approval, in the form of a certificate of appropriateness, from a local historic preservation commission or architectural review board for any exterior alterations or additions.

m. If federal funds are used for the project, obtain confirmation from a state historic preservation office or the National Park Service that the rehabilitation meets the Secretary of the Interior's Standards for Rehabilitation.

n. If a building or site is listed in the National Register of Historic Places but rehabilitation is not subject to federal or local review, include on the project team a preservation professional who meets the federal qualifications for historic architects; the architect must confirm conformance to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

GIB Credit: Minimized Site Disturbance in Design and Construction

Intent

To preserve existing noninvasive trees, native plants, and pervious surfaces.

Requirements

OPTION 1. Development Footprint on Previously Developed Land

Locate 100% of the development footprint on areas that are previously developed and for which 100% of the construction impact zone is previously developed.

OR

OPTION 2. Undeveloped Portion of Project Left Undisturbed

Depending on the density of the project, do not develop or disturb a portion of the land that has not been previously developed on the site, exclusive of any land preserved by codified law or a prerequisite of LEED for Neighborhood Development; or exempt areas designated as nonbuildable in land-use comprehensive plans and stipulate in covenants, conditions, and restrictions (CC&R) or other binding documents that the undisturbed area will be protected from development in perpetuity. Mixed-use projects must use the lowest applicable density or calculate a weighted average per the methodology in NPD Credit 2, Compact Development. Densities and minimum percentages are as follows:

Table 1. Minimum undeveloped area, by project density

Residential density (DU/acre)	Nonresidential density (FAR)	Minimum area left undisturbed
< 15	< 0.5	20%
15–21	0.5–1	15%
> 21	> 1	10%

DU = dwelling unit; FAR = floor-area ratio.

For portions of the site that are not previously developed, identify construction impact zones that limit disturbance to a minimum of 40 feet beyond the building perimeter; 10 feet beyond surface walkways, patios, surface parking, and utilities less than 12 inches in diameter; 15 feet beyond street curbs and main utility branch trenches; and 25 feet beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater retention facilities, and playing fields) that require additional staging areas to limit compaction in the constructed zone.

AND

All Projects

Survey the site to identify the following:

- trees in good or excellent condition, as determined by an arborist certified by the International Society of Arboriculture (ISA);
- any heritage or champion trees of special importance to the community because of their age, size, type, historical association, or horticultural value, as defined by a government forester;
- all trees larger than 6 inches in diameter at breast height (dbh, 4 feet 6 inches above ground); and
- any invasive tree species present on the site, and whether those trees threaten the health of other trees to be preserved on the site, as determined by an ISA-certified arborist
.

Preserve the following trees that are also identified as in good or excellent condition:

- all heritage or champion trees and trees whose dbh exceeds 50% of the state champion dbh for the species;
- a minimum of 75% of all noninvasive trees (including the above) larger than 18 inches dbh; and
- a minimum of 25% of all noninvasive trees (including the above) larger than 12 inches dbh if deciduous and 6 inches dbh if coniferous.

Tree condition ratings must be based on assessment by an ISA-certified arborist using ISA-approved assessment measures.

Develop a plan, in consultation with and approved by an ISA-certified arborist, for the health of the trees, including fertilization and pruning, and for their protection during construction. The plan must include protective fencing located 1 foot for each 1-inch caliper from the trunk or at the tree drip line, whichever is larger, and specify that if trenching or other disturbance is necessary within the protected zone, this work must be done by hand. If disturbance includes a permanent excavation of 3 feet or deeper, the excavation must start from a point not closer than 15 feet from the tree's drip line. If an ISA-certified arborist has determined that any trees to be preserved are threatened by invasive vegetation, develop a plan to reduce the invasive vegetation to the maximum extent possible. Stipulate in CC&R or other binding documents that the undisturbed area of the preserved trees will be protected from development in perpetuity.

GIB CREDIT: RAINWATER MANAGEMENT

Intent

To restore or maintain the natural hydrology and water balance of the site based on historical conditions and undeveloped ecosystems in the region.

Requirements

Implement a comprehensive stormwater management plan for the project that retains on-site, through infiltration, evapotranspiration, and/or reuse, the rainfall volumes listed in Table 1. Rainfall volume is based on the project's development footprint, any other areas that have been graded so as to be effectively impervious, and any pollution-generating pervious surfaces, such as landscaping that will be treated with fertilizers or pesticides.

The percentile rainfall event (Table 1) is the total rainfall on a given day in the record that is greater than or equal to X percent of all rainfall events over a 20- to 40+-year period. For example, if a 95th percentile event in a particular region is 1.5 inches, that is the volume to retain. To determine the percentile events, use NOAA's published national rainfall data, run an approved stormwater model, or independently gather local rain gauge data and rank rainfall events. None of the water volume from rainfall events up to the X percentile event may be discharged to surface waters unless the harvested and reused runoff is authorized for discharge or allowed to be discharged into sanitary treatment systems.

Table 1. Points for retaining stormwater on-site

Percentile rainfall event (determining total volume to be retained)	Points
80th	
85th	
90th	
95th	

Projects that earn at least X points under this credit may earn X additional point(s) by meeting one of the following site characteristics:

a. The project is located on a previously developed site.
b. The project is located on a site that meets the definition of brownfield in SLL Credit X, Brownfields Redevelopment
c. The project is designed to be transit ready by achieving the following:
   - at least 2 points under NPD Credit X, Walkable Streets;
   - at least 2 points under NPD Credit X, Compact Development; and
   - at least 2 points under NPD Credit X, Mixed-Use Neighborhood Centers.

The best management practices (BMPs) for the comprehensive stormwater management plan must be selected from the Washington State Department of Ecology's *Stormwater Management Manual for Western Washington, Volume V, Runoff Treatment* (2005 edition), or locally approved equivalent, whichever is more stringent, and must comply with all federal, state, and local regulations. The plan must include season-specific maintenance that ensures continuous performance of the stormwater management system.

For stormwater reuse systems not on a combined stormwater and sewer system, the total water reused for indoor use must not exceed 90% of the average annual rainfall.

Stormwater BMPs (except cisterns) must be designed to drain down within 72 hours.

GIB CREDIT: HEAT ISLAND REDUCTION

Intent

To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

Requirements

OPTION 1. Nonroof Measures

Use any combination of the following strategies for 50% of the nonroof site hardscape (including roads, sidewalks, courtyards, parking lots, parking structures, and driveways):

- Provide shade from open structures, such as those supporting solar photovoltaic panels, canopied walkways, and vine pergolas, all with a solar reflectance index (SRI) of at least 29.
- Use paving materials with an SRI of at least 29.
- Install an open-grid pavement system that is at least 50% pervious.
- Provide shade from tree canopy (within 10 years of landscape installation).

OR

OPTION 2. High-Reflectance and Vegetated Roofs

Use roofing materials that have an SRI equal to or greater than the values in Table 1 for a minimum of 75% of the roof area of all new buildings within the project; or install a vegetated ("green") roof for at least 50% of the roof area of all new buildings within the project. Combinations of SRI-compliant and vegetated roofs can be used, provided they collectively cover 75% of the roof area of all new buildings (use the equation in Option 3).

Table 1. Minimum solar reflectance index value, by roof slopeRoof slope	**SRI**
Low (≤ 2:12)	78
Steep (> 2:12)	29

OR

OPTION 3. Mixed Nonroof and Roof Measures

Use any of the strategies listed under Options 1 and 2 that in combination meet the following criterion:

(Area of Nonroof Measures / 0.5) + (Area of SRI Roof / 0.75) + (Area of Vegetated Roof / 0.5) ≥ Total Site Hardscape Area + Total Roof Area

GIB CREDIT: SOLAR ORIENTATION

Intent

To encourage energy efficiency by creating optimum conditions for the use of passive and active solar strategies.

Requirements

OPTION 1. Block orientation

(for projects earning at least 2 points under NPD credit 2, Compact Development)

Locate the project on existing blocks or design and orient the project such that 75% or more of the blocks have one axis within plus or minus 15 degrees of geographical east-west, and the east-west lengths of those blocks are at least as long as the north-south lengths of the blocks.

Earn at least 2 points under NPD Credit 2, Compact Development.

Figure 1. Block orientation for optimum use of solar strategies

OR

OPTION 2. Building orientation

(available for all projects)

Design and orient 75% or more of the project's total building square footage (excluding existing buildings) such that one axis of each qualifying building is at least 1.5 times longer than the other, and the longer axis is within 15 degrees of geographical east-west. The length-to-width ratio applies only to walls enclosing conditioned spaces; walls enclosing unconditioned spaces, such as garages, arcades, or porches, cannot contribute to credit achievement. The surface area of equator-facing vertical surfaces and slopes of roofs of buildings counting toward credit achievement must not be more than 25% shaded at the time of initial occupancy, measured at noon on the winter solstice.

Figure 2. Building orientation for optimum use of solar strategies

GIB Credit: On-Site Renewable Energy Sources

Intent

To encourage on-site renewable energy production to reduce the adverse environmental and economic effects associated with fossil fuel energy production and use.

Requirements

Incorporate on-site nonpolluting renewable energy generation, such as solar, wind, geothermal, small-scale or micro hydroelectric, and/or biomass, with production capacity of at least 5% of the project's annual electrical and thermal energy cost (exclusive of *existing* buildings), as established through an accepted building energy performance simulation tool. Points are awarded as listed below:

Percentage of annual electrical and thermal energy cost	Points
5%	1
12.5%	2
20%	3

GIB CREDIT: DISTRICT HEATING AND COOLING

Intent

To encourage the development of energy-efficient neighborhoods by employing district heating and cooling strategies that reduce energy use and adverse energy-related environmental effects.

Requirements

Incorporate a district heating and/or cooling system for space conditioning and/or water heating of new buildings (at least two buildings total) such that at least 80% of the *project's* annual heating and/or cooling consumption is provided by the district plant. *Single-family residential* buildings and *existing* buildings of any type may be excluded from the calculation.

Each system component that is addressed by ANSI/ASHRAE/IESNA Standard 90.1–2010 must have an overall efficiency performance at least 10% better than that specified by the standard's prescriptive requirements. Additionally, annual district pumping energy consumption that exceeds 2.5% of the annual thermal energy output of the heating and cooling plant (with 1 kWh of electricity equal to 3,413 Btus) must be offset by increases in the component's efficiency beyond the specified 10% improvement. Combined heat and power (CHP) district systems can achieve this credit by demonstrating equivalent performance.

GIB Credit: Infrastructure Energy Efficiency

Intent

To reduce adverse environmental effects from energy used for operating public infrastructure.

Requirements

Design, purchase, or work with the municipality to install all new infrastructure, including but not limited to traffic lights, *street* lights, and water and wastewater pumps, to achieve a 15% annual energy reduction below an estimated baseline energy use for this infrastructure. The baseline is calculated with the assumed use of lowest first-cost infrastructure items.

GIB CREDIT: WASTEWATER MANAGEMENT

This credit is available in the Pilot Credit Library.

Projects that have completed at least one stage of certification under the LEED 2009 for Neighborhood Development rating system may opt to use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements.

Intent

To reduce pollution from wastewater by encouraging water reuse.

Requirements

OPTION 1. Reuse

Design and construct the project to retain on site at least 25% or 50% of the average annual wastewater generated by the project (exclusive of existing buildings), and reuse that wastewater to replace potable water. Provide on-site treatment to the applicable NSF 350 standard or a quality required by state and local regulations for the proposed reuse, whichever is more stringent. The percentage of wastewater diverted and reused is calculated by determining the total wastewater flow using the design case from GIB Prerequisite , Minimum Building Water Use, and determining how much of that volume is reused on site.

Table 1. Points for reusing wastewater

Percentage of wastewater reused	Points
25%	
50%	

OPTION 2. Source Reduction

Minimize the need for water-based sewage conveyance by 50% by using alternative technologies (e.g., composting toilets).

OPTION 3. Nutrient Recovery

Implement resource recovery and reuse for 25% of the baseline nitrogen or organic carbon loading from building occupants.

GIB CREDIT: RECYCLED CONTENT IN INFRASTRUCTURE

Intent

To avoid the environmental consequences of extracting and processing virgin materials by using recycled and reclaimed materials.

Requirements

Use materials for new infrastructure such that the sum of the *postconsumer* recycled content, in-place reclaimed materials, and one-half of the *preconsumer* recycled content constitutes at least 50% of the total mass of infrastructure materials.

Count materials in all of the following infrastructure items as applicable to the *project:*

- Roadways, parking lots, sidewalks, unit paving, and curbs.
- Water retention tanks and vaults.
- Base and sub-base materials for the above.
- Stormwater, sanitary sewer, steam energy distribution, and water piping.

Recycled content is defined in accordance with ISO/IEC 14021, Environmental labels and declaration, Self-declared environmental claims (Type II environmental labeling).

GIB CREDIT: SOLID WASTE MANAGEMENT

Projects that have completed at least one stage of certification under the LEED 2012 for Neighborhood Development rating system may use the version of this credit under which they initially completed Stage 1 or Stage 2 in lieu of the following requirements

Intent

To reduce the volume of waste deposited in landfills and promote the proper disposal of hazardous waste.

Requirements

Meet at least four of the following five requirements and publicize their availability and benefits:

- Include as part of the *project* at least one recycling or reuse station, available to all project occupants, dedicated to the separation, collection, and storage of materials for recycling; or locate the project in a local government jurisdiction that provides recycling services. Include, at a minimum, the following materials: paper, corrugated cardboard, glass, plastics, and metals.

- Include as part of the project at least one drop-off point, available to all project occupants, for potentially hazardous office or household wastes; or locate the project in a local government jurisdiction that provides collection services. Examples of potentially hazardous wastes include paints, solvents, oil, and batteries. If a plan for postcollection disposal or use does not exist, establish one.

- Include as part of the project at least one compost station or location, available to all project occupants, dedicated to the collection and composting of food and yard wastes; or locate the project in a local government jurisdiction that provides composting services. If a plan for postcollection use does not exist, establish one.

- On every mixed-use or nonresidential *block* or at least every 800 feet, whichever is shorter, include recycling containers either adjacent to or integrated into the design of other receptacles

- Recycle, reuse or salvage at least 50% of nonhazardous construction, demolition, and renovation debris. Calculations can be done by weight or volume but must be consistent throughout. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and specifies whether the materials will be stored on-site or commingled. Reused or recycled asphalt, brick, and concrete (ABC) can account for a maximum of 75% of the diverted waste total. Excavated soil, land-clearing debris and materials contributing toward GIB Credit X, Existing Building Reuse, do not qualify for this credit.

GIB CREDIT: LIGHT POLLUTION REDUCTION

This credit is available in the Pilot Credit Library.

Intent

To increase night sky access, improve nighttime visibility, and reduce development impacts on wildlife environments by reducing uplight (skyglow) and light trespass (glare).

Requirements

Stipulate *covenants, conditions, and restrictions* (CC&R) or other binding documents to require continued adherence to the requirements.

For Residential Areas

At least 50% of the external luminaires must have fixture-integrated lighting controls that use motion sensors to reduce light levels by at least 50% when no activity has been detected for 30 minutes. Residential areas are defined as individual properties that contain either single-family residential buildings or multiunit residential buildings three stories or fewer.

AND

For All Other Areas

Meet the following requirements for uplight and light trespass, from ANSI/ASHRAE/IES Standard 90.1–2010 (lighting zone definitions, Table 9.4.5, and requirements, Section 9), for all exterior lighting, based on the photometric characteristics of each luminaire when mounted in the same orientation and tilt as specified in the project design.

Uplight (Skyglow)

For either option, use the lowest-numbered lighting zone for the site itself and all immediately adjacent properties at the time of submittal for LEED-ND certification. Uplight requirements apply to all nonexempt exterior luminaires located within the LEED site boundary.

UPLIGHT OPTION 1

Do not exceed the following maximum luminaire uplight ratings, based on the lumen rating of the lamp (as defined in IESNA TM-15-07, Addendum A):

Table 1. Maximum uplight ratings for luminaires, by lighting zone

Lighting zone	Luminaire uplight rating
LZ0	U0
LZ1	U1
LZ2	U2
LZ3	U3

LZ4	U4

OR

UPLIGHT OPTION 2. Calculation

For all nonexempt exterior luminaires, do not exceed the following percentage of total lumens emitted above the horizon (i.e., greater than 90 degrees above straight down):

Table 2. Maximum percentage of lumens above horizon, by lighting zone

Lighting zone	Lumens above horizon
LZ0	0%
LZ1	0%
LZ2	1.5%
LZ3	3%
LZ4	6%

Light Trespass (Glare)

Meet either of the following two options based on the photometric characteristics of each luminaire when mounted in the same orientation and tilt as specified in the project design.

LIGHT TRESPASS OPTION 1

For all nonexempt exterior lighting equipment, do not exceed the following luminaire backlight and light trespass ratings, based on the lumen rating of the lamp. Backlight and light trespass ratings are as defined in IESNA TM-15-07, Addendum A. Building-mounted luminaires with the backlight oriented toward the building are exempt from the backlight rating requirement.

Table 3. Maximum backlight and light trespass ratings, by lighting zone

	Lighting zone				
Luminaire mounting	LZ0	LZ1	LZ2	LZ3	LZ4
>2 mounting heights from lighting boundary	B4	B4	B4	B4	B4
1 to 2 mounting heights from lighting boundary and properly oriented	B2	B3	B3	B3	B4
0.5 to 1 mounting height to lighting boundary and properly oriented	B1	B2	B2	B3	B3
<0.5 mounting height to lighting boundary and properly oriented	B0	B0	B0	B1	B2

Building-mounted and <2 mounting heights from any lighting boundary	G0	G0	G1	G1	G2
Other	G0	G1	G2	G3	G4

Notes: The luminaire must be oriented with its backlight toward the nearest lighting boundary line. The lighting boundary coincides with the project boundary with two exceptions: (1) When the project boundary abuts a public area that is a walkway, bikeway, plaza, or parking lot, the lighting boundary extends 5 feet beyond the project boundary; and (2) when the project boundary abuts a public roadway or public transit corridor, the lighting boundary extends to the center line of that roadway or corridor. If a project contains multiple lighting zones, draw the lighting boundary around each zone using the method outlined above, substituting the property lines defining each zone for the project boundary.

OR

LIGHT TRESPASS OPTION 2

Do not exceed the following maximum vertical illuminances at the lighting boundary, calculated no more than 5 feet apart. The lighting zone for each calculation point is based on the lighting zone of the immediately adjacent property at the time of submittal for LEED-ND certification.

Table 4. Maximum vertical illuminance at lighting boundary, by lighting zone

Lighting zone	Vertical illuminance
LZ0	0.05 fc
LZ1	0.05 fc
LZ2	0.10 fc
LZ3	0.20 fc
LZ4	0.60 fc

Vertical illuminances must be calculated on vertical planes running parallel to the lighting boundary (defined above), with the normal to each plane oriented toward the property and perpendicular to the lighting boundary, extending from grade level to the height of the tallest luminaire.

Exemptions from the Exterior Lighting Requirements.

The following lighting systems are exempt from the various exterior lighting requirements. These exemptions may be claimed only if the subject lighting is controlled separately from the nonexempt lighting.

- specialized signal, directional, and marker lighting associated with transportation processes;
- directional signage;
- internally illuminated advertising signage;
- lighting that is used solely for façade and landscape lighting in lighting zones 3 and 4 and is automatically turned off from midnight until 6 a.m.;
- lighting that is integral to other equipment or instrumentation that has been installed by the equipment or instrumentation manufacturer;
- lighting for theatrical purposes for stage, film and video performances;
- lighting for industrial production, material handling, transportation sites, and associated storage areas;
- lighting of theme elements in theme or amusement parks; and
- government-mandated roadway lighting.

INNOVATION & DESIGN PROCESS (IDP)

IDP CREDIT: INNOVATION

Intent

To provide projects the opportunity to achieve exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in categories not specifically addressed by the LEED Green Building Rating System.

Requirements

Credit can be achieved through any combination of the Innovation in Design and Exemplary Performance paths as described below:

OPTION 1. Innovation

Achieve significant, measurable environmental performance using a strategy not addressed in the LEED Green Building Rating System.

One point is awarded for each innovation achieved. No more than 5 points under IDc1 may be earned through OPTION 1—Innovation.

Identify the following in writing:

- The intent of the proposed innovation credit.
- The proposed requirement for compliance.
- The proposed submittals to demonstrate compliance.
- The design approach (strategies) used to meet the requirements.

OPTION 2. Exemplary Performance

Achieve exemplary performance in an existing LEED 2009 prerequisite or credit that allows exemplary performance as specified in the LEED Reference Guide 2009 Edition. An exemplary performance point is typically earned for achieving double the credit requirements and/or achieving the next incremental percentage threshold of an existing credit in LEED.

One point is awarded for each exemplary performance achieved. No more than 3 points under IDc1 may be earned through OPTION 2— Exemplary Performance.

IDP CREDIT: LEED ACCREDITED PROFESSIONAL

Intent

To support and encourage the project team integration required by a LEED project and to streamline the application and certification process.

Requirements

At least one (1) principal participant of the project team shall be a LEED Accredited Professional (AP) with a specialty most appropriate for the project.

In addition, two (2) individuals representing primary disciplines on the project are required to be LEED APs (any specialty) or Green Associates.

REGIONAL PRIORITY (RP)

RP CREDIT: REGIONAL PRIORITY

Intent

To provide an incentive for the achievement of credits that address geographically specific environmental, social equity, and public health priorities.

Requirements

Earn up to four of the six Regional Priority credits. These credits have been identified by subject matter experts representing the U.S. Green Building Council (regional councils and chapters), the Congress for the New Urbanism (chapters and membership in regions without chapters), and Smart Growth America (members of Smart Growth America's State and Local Caucus or their designees) as having additional regional importance for the project's location. A database of Regional Priority credits and their geographic applicability will be available on the USGBC website, www.usgbc.org.

One point is awarded for each Regional Priority credit earned, up to a maximum of 4. Non-U.S. projects are not eligible for Regional Priority credits.

APPENDIX 1: DIVERSE USES

Food Retail
Supermarket
Other food store with produce

Community-Serving Retail
Clothing store or department store selling clothes
Convenience store
Farmer's market
Hardware store
Pharmacy
Other retail

Services
Bank
Gym, health club, exercise studio
Hair care
Laundry, dry cleaner
Restaurant, café, diner (excluding establishments with only drive-throughs)

Civic and Community Facilities
Adult or senior care (licensed)
Child care (licensed)
Community or recreation center
Cultural arts facility (museum, performing arts)
Educational facility (including K–12 school, university, adult education center, vocational school, community college)
Family entertainment venue (theater, sports)
Government office that serves public on-site
Place of worship
Medical clinic or office that treats patients
Police or fire station
Post office
Public library
Public park
Social services center

Adapted from Criterion Planners, INDEX neighborhood completeness indicator, 2005.

APPENDIX 2: DEFAULT OCCUPANCY COUNTS

Because of the speculative nature of core and shell construction, a project team may not know the final occupant count during the LEED certification process. Determining and demonstrating compliance with some LEED credits can prove challenging and complex. For projects that do not know the final occupant count, a default table has been developed.

Core & Shell projects that do not have final occupancy counts must utilize the default occupancy counts provided in this appendix. Projects that know the tenant occupancy must use the actual numbers, as long as the gross square foot per employee is not greater than that in the default occupancy count table. If code requirements is required gross square foot per occupant is less than those in the table, this is also acceptable. Default occupancy counts are provided for typical core and shell project types. If the buildings and circumstances are not covered in this appendix, provide documentation for comparable buildings demonstrating average gross square foot per occupant when estimating the core and shell's building occupancy.

Table 1. Default Occupancy Numbers

	Gross Square Feet per Occupant	
	Employees	Transients
General office	250	0
Retail, general	550	130
Retail or service (e.g., financial, auto)	600	130
Restaurant	435	95
Grocery store	550	115
Medical office	225	330
R&D or laboratory	400	0
Warehouse, distribution	2,500	0
Warehouse, storage	20,000	0
Hotel	1,500	700
Educational, daycare	630	105
Educational, K–12	1,300	140

Educational, postsecondary	2,100	150

Sources:
ANSI/ASHRAE/IESNA Standard 90.1–2004 (Atlanta, GA, 2004).
2001 Uniform Plumbing Code (Los Angeles, CA)
California Public Utilities Commission, 2004–2005 Database for Energy Efficiency Resources (DEER) Update Study (2008).
California State University, Capital Planning, Design and Construction Section VI, Standards for Campus Development Programs (Long Beach, CA, 2002).
City of Boulder Planning Department, Projecting Future Employment—How Much Space per Person (Boulder, 2002).
Metro, 1999 Employment Density Study (Portland, OR 1999).
American Hotel and Lodging Association, Lodging Industry Profile Washington, DC, 2008.
LEED for Core & Shell Core Committee, personal communication (2003 - 2006).
LEED for Retail Core Committee, personal communication (2007)
OWP/P, Medical Office Building Project Averages (Chicago, 2008).
OWP/P, University Master Plan Projects (Chicago, 2008).
U.S. General Services Administration, Childcare Center Design Guide (Washington, DC,2003).

The figures above may be used to determine occupancy for the following credits:

- SS Credit 4.2: Alternative Transportation, Bicycle Storage and Changing Rooms
- SS Credit 4.4: Alternative Transportation—Parking Capacity
- WE Prerequisite 1: Water Use Reduction
- WE Credit 2: Innovative Wastewater Technologies
- WE Credit 3: Water Use Reduction
- EA Prerequisite 2: Minimum Energy Performance
- EA Credit 1: Optimized Energy Performance
- IEQ Prerequisite 1: Minimum Indoor Air Quality Performance
- IEQ Credit 1: Outdoor Air Delivery Monitoring
- IEQ Credit 2: Increased Ventilation
- IEQ Credit 6: Controllability of Systems—Thermal Comfort
- IEQ Credit 7: Thermal Comfort—Design
- IEQ Credit 8: Daylight and Views

The defaults provided above are based on gross square foot per occupant and not net or leasable square foot per occupant. Gross square footage is defined as the sum of all areas on all floors of a building included within the outside faces of the exterior wall including all floor penetrations that connect one floor to another. This can be determined by taking the building foot print and multiplying it by the number of floors in the building. Projects which contain underground and/or structured parking, may exclude that area from the gross square footage used for the calculation. Other spaces such as common areas, mechanical spaces, and circulation should be included in the gross square footage of the building.

GLOSSARY

accessory dwelling unit a subordinate *dwelling unit* that is attached to a principal building or contained in a separate structure on the same property as the principal unit.

adjacent site a site having at least 25% of its boundary bordering parcels that are each at least 75% *previously developed*. A *street* or other right-of-way does not constitute previously developed land; instead, it is the status of the property on the other side of the street or right-of-way that matters. Any fraction of the boundary that borders waterfront other than a stream is excluded from the calculation. A site is still considered adjacent if the 25% adjacent portion of its boundary is separated from previously developed parcels by undeveloped, permanently protected land averaging no more than 400 feet in width and no more than 500 feet in any one place. The undeveloped land must be permanently preserved as natural area, riparian corridor, *park*, greenway, agricultural land, or designated *cultural landscape*. Permanent pedestrian paths connecting the *project* through the protected parcels to the bordering site may be counted to meet the requirement of SLL Prerequisite 1, Option 2 (that the project be connected to the adjacent parcel by a through-street or nonmotorized right-of-way every 600 feet on average, provided the path or paths traverse the undeveloped land at no more than a 10% grade for walking by persons of all ages and physical abilities).

alley a publicly accessible right-of-way, generally located midblock, that can accommodate slow-speed motor vehicles, as well as bicycles and pedestrians. An alley provides access to the side or rear of abutting properties for loading, parking, and other service functions, minimizing the need for these functions to be located along streets. It may be publicly dedicated or privately owned and deeded in perpetuity for general public use.

applicant the entity that prepares the LEED-ND *project* submission and is responsible for project implementation. An applicant may be the *developer* or another cooperating entity.

area median income the median income of a county as determined by the U.S. Department of Housing and Urban Development.

bicycle network a continuous network consisting of any combination of

- physically designated on-*street* bicycle lanes at least 5 feet wide
- off-street bicycle paths or trails constructed before 2010 that are at least 8 feet wide for a two-way path and at least 5 feet wide for a one-way path
- off-street bicycle paths or trails constructed in or after 2010 that are at least 10 feet wide for a two-way path and at least 5 feet wide for a one-way path
- residential streets designed for a target speed of 25 miles per hour or slower
- commercial or mixed-use streets designed for a target speed of 30 miles per hour or slower.

block land bounded by the *project boundary*, transportation or utility rights-of-way that may be publicly dedicated or privately owned and deeded in perpetuity for general public use, waterfront, and/or comparable land division features.

brownfield real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or possible presence of a hazardous substance, pollutant, or contaminate.

build-out the time at which all *habitable buildings* on the *project* are complete and ready for occupancy.

buildable land the portion of the site where construction can occur, including land voluntarily set aside and not constructed upon. When used in *density* calculations, buildable land excludes public rights-of-way and land excluded from development by codified law or LEED for Neighborhood Development

prerequisites. An *applicant* may exclude additional land not exceeding 15% of the buildable land base defined above, provided the following conditions are present:

a. The land is protected from residential and nonresidential construction by easement, deed restriction, or other enforceable legal instrument.
   AND
b. Either 25% or more of the boundary of each contiguous parcel proposed for exclusion borders a *water body* or areas outside the *project boundary* that are protected by codified law; or ownership of, or management authority over, the exclusion area is transferred to a public entity.

bus rapid transit an enhanced bus system that operates on exclusive bus lanes or other transit rights-of-way; it is designed to combine the flexibility of buses with the efficiency of rail.

community-supported agriculture (CSA) a farm operation for which a community of individuals pledges support so that the farmland becomes, either legally or informally, the community's farm. The growers and consumers provide mutual support, sharing the risks and benefits of food production. Consumers receive portions of the farm's harvest throughout the growing season.

connectivity the number of publicly accessible *street* intersections per square mile, including intersections of streets with dedicated *alleys* and transit rights-of-way, and intersections of streets with nonmotorized rights-of-way (up to 20% of total intersections). If one must both enter and exit an area through the same intersection, such an intersection and any intersections beyond that point are not counted; intersections leading only to *culs-de-sac* are also not counted. The calculation of square mileage excludes *water bodies*, *parks* larger than 1/2 acre, public facility campuses, airports, rail yards, slopes over 15%, and areas nonbuildable under codified law or the rating system. Street rights-of-way may not be excluded.

construction impact zone the *project's development footprint* plus the areas around the improvement where construction crews, equipment, and/or materials are staged and moved during construction.

covenants, conditions, and restrictions limitations that may be placed on a property and its use and are made a condition of holding title or lease.

cul-de-sac a *street* segment that terminates without intersecting another street segment.

cultural landscape an officially designated geographic area that includes both cultural and natural resources associated with a historic event, activity, or person or that exhibits other significant cultural or aesthetic values.

density the amount of building structures constructed on the *project* site, measured for residential buildings as *dwelling units* per acre of *buildable land* available for residential uses, and for non-residential buildings as the *floor-area ratio* of buildable land area available for nonresidential uses. In both cases, structured parking is excluded.

developer a public and/or private entity that controls a majority of the *project's buildable land* and is committed to making a majority of the investments required for the project implementation described in the LEED-ND submission.

development footprint the total land area of a *project* site covered by buildings, *streets*, parking areas, and other typically impermeable surfaces constructed as part of the project.

dwelling unit living quarters intended for long-term occupancy that provide facilities for cooking, sleeping, and sanitation. This does not include hotel rooms.

employment center a nonresidential area of at least 5 acres with a job density of at least 50 employees per net acre.

existing present on the date of submission of LEED-ND certification documents; similarly, an element or condition that **exists** is present on the date that LEED-ND certification documents are submitted.

floor-area ratio (FAR) the *density* of nonresidential land use, exclusive of parking, measured as the total nonresidential building floor area divided by the total *buildable land* area available for nonresidential structures. For example, on a site with 10,000 square feet of buildable land area, an FAR of 1.0 would be 10,000 square feet of building floor area. On the same site, an FAR of 1.5 would be 15,000 square feet of built floor area; an FAR of 2.0 would be 20,000 built square feet and an FAR of 0.5 would be 5,000 built square feet.

freight village a cluster of freight-related businesses located inside a secure perimeter operated under single management structure. Freight Villages usually offer intermodal transfer options, logistics services, integrated distribution, warehousing capabilities, showrooms, and support services. Such support services might include: security, maintenance, mail, banking, customs and import management assistance, cafeterias, restaurants, office space, conference rooms, hotels, and public or activity-center transportation. (Houston-Galvenston Area Council)

functional entry a building opening designed to be used by pedestrians and open during regular business hours. This does not include any door exclusively designated as an emergency exit, or a garage door not designed as a pedestrian entrance.

habitable building a structure intended for living, working, or other types of occupancy. Habitable structures do not include stand-alone garages and utility structures such as pump stations.

historic district a group of buildings, structures, objects, and sites, of varying sizes, that have been designated as historically and architecturally significant and categorized as either contributing or noncontributing.

infill site (LEED Building Design & Construction and Interior Design & Construction rating systems) a site where at least 75% of the land area, exclusive of rights-of-way, within a ½ mile distance from the *project boundary* is previously developed. A *street* or other right-of-way does not constitute *previously deve*loped land; it is the status of property on the other side or right-of-way of the street that matters.

infill site (LEED for Neighborhood Development) a site that meets any of the following four conditions:

a. At least 75% of its boundary borders parcels that individually are at least 50% *previously developed*, and that in aggregate are at least 75% previously developed.
b. The site, in combination with bordering parcels, forms an aggregate parcel whose boundary is 75% bounded by parcels that individually are at least 50% previously developed, and that in aggregate are at least 75% previously developed.
c. At least 75% of the land area, exclusive of rights-of-way, within a ½ mile distance from the *project boundary* is previously developed.
d. The lands within a ½ mile distance from the project boundary have a *preproject connectivity* of at least 140 intersections per square mile.

A *street* or other right-of-way does not constitute *previously deve*loped land; it is the status of property on the other side or right-of-way of the street that matters. For conditions (a) and (b) above, any fraction of the perimeter that borders waterfront other than a stream is excluded from the calculation.

intermodal facility a venue that includes the movement of goods in one and the same loading unit or road vehicle, using successively two or more modes of transportation without handling the goods themselves in changing modes. (Source: International Union of Railways, http://www.railfreightportal.com/spip.php?article4)

Low-emitting and fuel-efficient vehicle vehicles that are either classified as Zero Emission Vehicles (ZEV) by the California Air Resources Board or have achieved a minimum green score of 45 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide.

metropolitan (metro) and **micropolitan (micro) statistical area** a geographic entity defined by the U.S. Office of Management and Budget for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. A metro area contains a core urban area with a population of 50,000 or more, and a micro area contains an urban core with a population between 10,000 and 50,000. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core. “Core-based statistical area” (CBSA) encompasses both metro and micro areas.

multiunit residential consisting of four or more residential units sharing a common entry.

park a publicly accessible area that is permanently maintained in a seminatural condition for human recreation and relaxation; it has soil, grass, water, flora, and/or recreation improvements.

paseo a publicly accessible pedestrian path, at least 4 feet wide and no more than 12 feet wide, that provides shortcuts between buildings and through the block, connecting *street* frontages to rear parking areas, midblock courtyards, *alleys*, or other streets. A paseo may be roofed for up to 50% of its length and may be privately owned or publicly dedicated.

planned diverse use a shop, service, or facility outside the *project boundary* that has received a building permit and is under construction at the time of the first certificate of occupancy is issued for any building in the LEED-ND *project*.

planned occupancy the highest estimate of building occupants based on planned use(s) and industry standards for square foot requirements per employee. The minimum planned occupancy for *multiunit residential* buildings is 1 person for a studio unit, 1.5 persons for a one-bedroom unit, and 1.25 persons per bedroom for a two- bedroom or larger unit.

plaza a publicly accessible gathering space that is integrated into the street network and allows vehicular, bicycle, and/or pedestrian travel. A plaza is generally paved, is spatially defined by building fronts paralleling at least two-thirds of its perimeter, and may be privately owned or publicly dedicated.

predevelopment before any development occurred on the site. Predevelopment conditions describe the natural conditions of the site prior to any human alteration, such as development of roads or buildings.

preferred parking the parking spots that are closest to the main entrance of the project (exclusive of spaces designated for handicapped persons). For employee parking, “preferred parking” refers to the spots that are closest to the entrance used by employees.

previously developed altered by paving, construction, and/or land use that would typically have required regulatory permitting to have been initiated (alterations may exist now or in the past). Previously developed land includes a platted lot on which a building was constructed if the lot is no more than 1 acre; previous development on lots larger than 1 acre is defined as the *development footprint* and land alterations associated with the footprint. Land that is not previously developed and altered landscapes resulting from current or historical clearing or filling, agricultural or forestry use, or preserved natural area use are considered undeveloped land. The date of previous development permit issuance constitutes the date of previous development, but permit issuance in itself does not constitute previous development.

previously developed site a site that, *preproject*, consisted of at least 75% *previously developed* land.

preproject before the LEED-ND *project* was initiated, but not necessarily before any development or disturbance took place. Preproject conditions describe the state of the project site on the date the *developer* acquired rights to a majority of its *buildable land* through purchase or option to purchase.

prime soil earth with chemical, hydrographic, and topological properties that make it especially suited to the production of crops, as defined by the U.S. Natural Resources Conservation Service.

project the land, water, and construction that constitutes the project application. A project *applicant* does not have to own or control all land or water within a *project boundary*, but all the area within the project boundary must comply with prerequisites and attempted credits.

project boundary the platted property line of the *project* defining land and water within it. Projects located on publicly owned campuses that do not have internal property lines must delineate a sphere-of-influence line to be used instead. *Project sit*e is equivalent to the land and water inside the project boundary. The project must not contain noncontiguous parcels, but parcels can be separated by public rights-of-way. Projects may also have enclaves of nonproject properties that are not subject to the rating system, but such enclaves cannot exceed 2% of the total project area and cannot be described as certified.

retail project a space or building dedicated to the sale of goods or commodities directly to consumers who come onto the premise for the purpose of obtaining those goods or commodities. Includes (but not limited to) banking, restaurants, stores of any kind, spas, shopping centers (open air and enclosed), etc. Includes both direct customer service areas (showroom) and preparation or storage areas that support the customer service. Circulation spaces shared with other building uses must be attributed to the separate spaces proportionally.

school a kindergarten, elementary, or secondary institution for the academic instruction of children.

single-family residential any residential unit other than *multiunit residential*, including single, duplex, triplex, row house, townhouse and semiattached residential building types.

street a dedicated right-of-way that can accommodate one or more modes of travel, excluding *alleys* and *paseos*. A street is suitable for primary entrances and provides access to the front and/or sides of buildings and lots. A street may be privately owned as long as it is deeded in perpetuity for general public use. A street must be an addressable thoroughfare (for mail purposes) under the standards of the applicable regulating authority.

square (also **green**) a publicly accessible open area for gatherings that is wholly or partially bounded by segments of the *street* network. A square can be landscaped or landscaped and paved, is spatially defined by building fronts paralleling at least 45% of its perimeter, and may be privately owned or publicly dedicated.

traffic analysis zone a statistical entity delineated by state and/or local transportation officials for tabulating traffic-related data (especially journey-to-work and place-of-work statistics) from a decennial census. A TAZ usually consists of one or more census blocks, block groups, or census tracts. (U.S Census Bureau)

unique soil earth with chemical, hydrographic, and topological properties that make it especially suited to specific crops, as defined by the U.S. Natural Resources Conservation Service.

walk distance the distance that a pedestrian must travel between origins and destinations without obstruction, in a safe and comfortable environment on a continuous network of sidewalks, all-weather-surface footpaths, crosswalks, *woonerfs*, or equivalent pedestrian facilities.

water body the surface water of a stream (first-order and higher, including intermittent streams), arroyo, river, canal, lake, estuary, bay, or ocean, excluding irrigation ditches

water and wastewater infrastructure publicly owned water and wastewater infrastructure; this excludes septic and mound wastewater treatment systems.

wetland an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas, but exclude irrigation ditches unless delineated as part of an adjacent wetland.

woonerf a *street*, also known as a home zone, shared zone, or living street, where pedestrians have priority over vehicles and the posted speed limit is no greater than 10 miles per hour. Physical elements within the roadway, such as shared surfaces, plantings, street furniture, parking, and play areas, slow traffic and invite pedestrians to use the entire right-of-way.

vehicle miles traveled (VMT) the number of miles driven by motorists in a specified time period, such as a day or a year, in absolute or per capita terms.

yard jockey a vehicle used primarily on the site to facilitate the movement of truck trailers and other types of large shipping containers from one area of the site to another. Fork lift trucks are not considered a type of yard jockey.