Landscape water use reduction

WE1 | Possible point

Glossary

Intent

Limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

Eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

To limit or eliminate the use of potable water or other natural surface or subsurface resources available on or near the project site for landscape irrigation.

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To limit or eliminate the use of potable water or other natural surface or subsurface resources available on or near the project site for landscape irrigation.

To limit or eliminate the use of potable water or other natural surface or subsurface resources available on or near the project site for landscape irrigation.

To reduce outdoor water consumption.

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Requirements

Reduce potable water consumption for irrigation by 50% from a calculated mid-summer baseline case.

Reductions shall be attributed to any combination of the following items:

- Plant species factor
- Irrigation efficiency
- Use of captured rainwater
- Use of recycled wastewater
- Use of water treated and conveyed by a public agency specifically for non-potable uses

Achieve WE Credit 1.1 and:

Use only captured rainwater, recycled wastewater, recycled greywater, or water treated and conveyed by a public agency specifically for non-potable uses for irrigation.

OR

Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within one year of installation.

Reduce potable water or other natural surface or subsurface resource consumption for irrigation compared with conventional means of irrigation. If the building does not have separate water metering for irrigation systems, the water-use reduction achievements can be demonstrated through calculations. Points are earned according to the following schedule:

- **WE Credit 3.1** (1 point): 50% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.2** (2 points): 75% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.3** (3 points): 100% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.

For buildings without vegetation or other ecologically appropriate features on the

grounds, points can be earned by reducing the use of potable water for watering any roof and/or courtyard garden space or outdoor planters, provided the planters and/or garden space cover at least 5% of the building site area (including building footprint, hardscape area, parking footprint, etc). If the planters and/or garden space cover less than 5% of the building site area, the project is ineligible for this credit.

Three options are available to demonstrate compliance with the above requirements. Project teams that do not separately meter their actual irrigation water use during the performance period must choose Option B.

Choose one of the following options:

Option A

Calculate the baseline irrigation water use by determining the water use that would result from using an irrigation system typical for the region and compare this with the building's actual irrigation potable water use, which can be determined through submetering. Use the baseline and actual water use values to calculate the percentage reduction in potable water or other natural surface or subsurface resource use. More detail about completing this calculation is available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option B

Calculate the estimated irrigation water use by determining the landscape area for the project and sorting this area into the major vegetation types. Determine the reference evapotranspiration rate (ET0) for the region and determine the Species Factor (ks), Density Factor (kd) and Microclimate Factor (kmc) for each vegetation type. Use this information to calculate the Landscape Coefficient (KL) and irrigation water use for the design case. Calculate the baseline case irrigation water use by setting the above factors to average values representative of conventional equipment and design practices. Use the estimated and baseline case to determine the percentage reduction in potable water or other natural surface or subsurface resource use. Factor values and other resources for completing these calculations are available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option C

If independent irrigation performance and ranking tools are available from local, regional, state or national sources, use such tools to demonstrate reductions in potable water or other natural surface or subsurface resource for irrigation purposes. Provide information about the independent tool to demonstrate that it is technically sound.

Potable water is defined as water that is suitable for drinking and is supplied from wells or municipal water systems.

Use high-efficiency irrigation technology, captured rain/recycled site water, or landscaping and other techniques to reduce potable water consumption for irrigation in comparison to conventional means of irrigation. If the building does not have separate metering for each water use (fixture use, process use, irrigation and other uses), the water use reduction achievements can be demonstrated with calculations. At least one meter for the overall building water use is required and metering for cooling towers and other process water use is encouraged but not required. In urban settings, where there is no lawn, credits can be earned by reducing the use of potable water for watering any roof/courtyard garden space or outdoor planters.

- WE Credit 1.1: 50% reduction in potable water use for irrigation over conventional means of irrigation. (1 point)
- WE Credit 1.2: 95% reduction in potable water use for irrigation over conventional means of irrigation. (1 point)

Reduce potable water consumption for irrigation by 50% from a calculated mid-summer baseline case.

Reductions shall be attributed to any combination of the following items:

- Plant species factor
- Irrigation efficiency
- Use of captured rainwater
- Use of recycled wastewater
- Use of water treated and conveyed by a public agency specifically for non-potable uses

Achieve WE Credit 1.1 and:

Use only captured rainwater, recycled wastewater, recycled greywater, or water treated and conveyed by a public agency specifically for non-potable uses for irrigation.

OR

Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within one year of installation.

Reduce potable water consumption for irrigation by 50% from a calculated mid-summer baseline case.

Reductions shall be attributed to any combination of the following items:

- Plant species factor
- Irrigation efficiency
- Use of captured rainwater
- Use of recycled wastewater
- Use of water treated and conveyed by a public agency specifically for non-potable uses

Achieve WE Credit 1.1 and:

Use only captured rainwater, recycled wastewater, recycled greywater, or water treated and conveyed by a public agency specifically for non-potable uses for irrigation.

OR

Install landscaping that does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within one year of installation.

Use high-efficiency irrigation technology OR use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means.

1 point in addition to WE 1.1

Use only captured rain or recycled site water to eliminate all potable water use for site irrigation (except for initial watering to establish plants), OR do not install permanent landscape irrigation systems.

Use high-efficiency irrigation technology OR use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means.

Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems.

Reduce potable water or other natural surface or subsurface resource consumption for irrigation compared with conventional means of irrigation. If the building does not have separate water metering for irrigation systems, the water-use reduction achievements can be demonstrated through calculations. Points are earned according to the following schedule:

- **WE Credit 3.1** (1 point): 50% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.2** (2 points): 75% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.3** (3 points): 100% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.

For buildings without vegetation or other ecologically appropriate features on the grounds, points can be earned by reducing the use of potable water for watering any roof and/or courtyard garden space or outdoor planters, provided the planters and/or garden space cover at least 5% of the building site area (including building footprint, hardscape area, parking footprint, etc). If the planters and/or garden space cover less than 5% of the building site area, the project is ineligible for this credit.

Three options are available to demonstrate compliance with the above requirements. Project teams that do not separately meter their actual irrigation water use during the performance period must choose Option B.

Choose one of the following options:

Option A

Calculate the baseline irrigation water use by determining the water use that would result from using an irrigation system typical for the region and compare this with the building's actual irrigation potable water use, which can be determined through submetering. Use the baseline and actual water use values to calculate the percentage reduction in potable water or other natural surface or subsurface resource use. More detail about completing this calculation is available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option B

Calculate the estimated irrigation water use by determining the landscape area for the project and sorting this area into the major vegetation types. Determine the reference evapotranspiration rate (ET0) for the region and determine the Species Factor (ks), Density Factor (kd) and Microclimate Factor (kmc) for each vegetation type. Use this information to calculate the Landscape Coefficient (KL) and irrigation water use for the design case. Calculate the baseline case irrigation water use by setting the above factors to average values representative of conventional equipment and design practices. Use the estimated and baseline case to determine the percentage reduction in potable water or other natural surface or subsurface resource use. Factor values and other resources for completing these calculations are available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option C

If independent irrigation performance and ranking tools are available from local, regional, state or national sources, use such tools to demonstrate reductions in potable water or other natural surface or subsurface resource for irrigation purposes. Provide information about the independent tool to demonstrate that it is technically sound.

Potable water is defined as water that is suitable for drinking and is supplied from wells or municipal water systems.

Reduce potable water or other natural surface or subsurface resource consumption for irrigation compared with conventional means of irrigation. If the building does not have separate water metering for irrigation systems, the water-use reduction achievements can be demonstrated through calculations. Points are earned according to the following schedule:

- **WE Credit 3.1** (1 point): 50% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.2** (2 points): 75% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.
- **WE Credit 3.3** (3 points): 100% reduction in potable water or other natural surface or subsurface resource use for irrigation over conventional means of irrigation.

For buildings without vegetation or other ecologically appropriate features on the grounds, points can be earned by reducing the use of potable water for watering any roof and/or courtyard garden space or outdoor planters, provided the planters and/or

garden space cover at least 5% of the building site area (including building footprint, hardscape area, parking footprint, etc). If the planters and/or garden space cover less than 5% of the building site area, the project is ineligible for this credit.

Three options are available to demonstrate compliance with the above requirements. Project teams that do not separately meter their actual irrigation water use during the performance period must choose Option B.

Choose one of the following options:

Option A

Calculate the baseline irrigation water use by determining the water use that would result from using an irrigation system typical for the region and compare this with the building's actual irrigation potable water use, which can be determined through submetering. Use the baseline and actual water use values to calculate the percentage reduction in potable water or other natural surface or subsurface resource use. More detail about completing this calculation is available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option B

Calculate the estimated irrigation water use by determining the landscape area for the project and sorting this area into the major vegetation types. Determine the reference evapotranspiration rate (ET0) for the region and determine the Species Factor (ks), Density Factor (kd) and Microclimate Factor (kmc) for each vegetation type. Use this information to calculate the Landscape Coefficient (KL) and irrigation water use for the design case. Calculate the baseline case irrigation water use by setting the above factors to average values representative of conventional equipment and design practices. Use the estimated and baseline case to determine the percentage reduction in potable water or other natural surface or subsurface resource use. Factor values and other resources for completing these calculations are available in the LEED for Existing Buildings: Operations & Maintenance Reference Guide.

Option C

If independent irrigation performance and ranking tools are available from local, regional, state or national sources, use such tools to demonstrate reductions in potable water or other natural surface or subsurface resource for irrigation purposes. Provide information about the independent tool to demonstrate that it is technically sound.

Potable water is defined as water that is suitable for drinking and is supplied from wells or municipal water systems.

Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion.

Option 1. No irrigation required (2 points except Healthcare, 1 point Healthcare)

Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.

OR

Option 2. Reduced irrigation (1-2 points except Healthcare, 1 point Healthcare)

Reduce the project's landscape water requirement (LWR) by at least 50% from the calculated baseline for the site's peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.

Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.

Table 1. Points for reducing irrigation water

Percentage reduction from baseline	Points (except Healthcare)	Points (Healthcare)
50%	1	1
100%	2	—

Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion.

If landscape irrigation is not submetered, use Option 2.

Establishment

Option 1. No irrigation required (2 points except Healthcare, 1 point Healthcare)

Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.

Option 2. No irrigation meter installed: calculated water budget (1–2 points)

Use the existing landscape to calculate the landscape water requirement using the EPA WaterSense Water Budget Tool.

Install an irrigation meter.

Option 3. Irrigation meter installed (1–2 points)

The baseline is established using the annual average of at least 3 years of consecutive data out of the last 5 years.

Performance

Option 1. No irrigation required (2 points)

None.

Option 2. No irrigation meter: calculated water budget (1–2 points)

Points are earned according to Table 1.

Option 3. Irrigation meter installed (1–2 points)

Demonstrate a reduction in outdoor water use over the most recent 12 months compared with the established baseline. Points are earned according to Table 1.

Table 1. Points for reducing irrigation water

Percentage reduction from baseline	Points
30%	1
40%	2

Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion.

Option 1. No irrigation required (2 points)

Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.

OR

Option 2. Reduced irrigation (2 points)

Reduce the project's landscape water requirement (LWR) by at least 30% from the calculated baseline for the site's peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.

Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.

Table 1. Points for reducing irrigation water

Percentage reduction from baseline	Points
30%	1
50%	2

Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion.

Option 1. No irrigation required (2 points except Healthcare, 1 point Healthcare)

Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.

OR

Option 2. Reduced irrigation (1-2 points except Healthcare, 1 point Healthcare)

Reduce the project's landscape water requirement (LWR) by at least 50% from the calculated baseline for the site's peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool.

Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.

Table 1. Points for reducing irrigation water

Percentage reduction from baseline	Points (except Healthcare)	Points (Healthcare)
50%	1	1
100%	2	—