

## Saint Paul Overlay

In addition to certification with one of the Sustainable Building Standards, projects complying with the Saint Paul Sustainable Building Ordinance (SPSBO) must also meet and document the requirements laid out in this section, referred to as the *Saint Paul Overlay*. The Ordinance states that the Overlay must require specific measurable requirements in the following areas:

- Predicted and actual energy use
- Predicted greenhouse gas emissions
- Predicted and actual use of potable water
- Predicted use of water for landscaping
- Utilization of renewable energy
- Electric vehicle charging capability
- Diversion of construction waste from landfills and incinerators
- Indoor environmental quality
- Stormwater management
- Resilient Design
- Ongoing monitoring of actual energy and water use

While achieving the Overlay requirements may contribute toward compliance with one or more of the identified *Sustainable Building Standards*, some additional documentation of compliance with the *Saint Paul Overlay* must be completed.

The following section lists the requirements of the *Saint Paul Overlay*, the required method(s) of demonstration of compliance, and the time at which this is due to be reported to the *Sustainability Facilitator*. Some of the *Overlay Requirements* have coordinating or overlapping reporting requirements; these are reordered to streamline project teams reporting.

### **List of Overlay Requirements:**

1. Predicted and actual energy use  
Predicted greenhouse gas emissions  
Ongoing monitoring of actual energy use
2. Predicted and actual use of potable water  
Predicted use of water for landscaping  
Ongoing monitoring of actual water use
3. Utilization of renewable energy
4. Electric vehicle charging capability
5. Diversion of construction waste from landfills and incinerators
6. Indoor Environmental Quality
7. Stormwater Management
8. Resilient Design

## \* Overlay Requirement 1: Meet SB 2030 Energy Standard

Meeting this requirement during design and construction will document compliance with the following items:

- Predicted and actual energy use
- Predicted greenhouse gas emissions
- Ongoing monitoring of actual energy use

### *Overlay requirement:*

Project teams must demonstrate that projects meet the State of Minnesota's SB 2030 Standard during both design and through 10 years of occupancy. The SB 2030 Standard sets an absolute energy target in Energy Use Intensity (EUI) in annual kBtu/sf based on the building's program and schedule. This standard is based on the following reduction from a 2003 baseline average building: 70% from 2015 through 2019, 80% from 2020 through 2024, and 90% from 2025 through 2030. Achieving this energy target may be done through improvement in energy efficiency and/or on-site renewable energy. Owners of campuses or sites that are greater than, and contiguous with the specific project site are permitted to locate new renewable systems that contribute to meeting SB 2030 anywhere on that campus, not merely on the portion associated with the relevant SPSBO project.

The SB 2030 program documentation is available at <http://www.b3mn.org/2030energystandard/>. Multiple paths may be available for projects, including methods for smaller buildings (under 20,000ft<sup>2</sup>) with more limited energy modeling requirements.

## \* Overlay Requirement 2: Indoor and Outdoor Water Efficiency

Meeting this requirement during design, construction, and operation will document compliance with the following items:

- Predicted and actual use of potable water indoors
- Predicted use of water for landscaping
- Ongoing monitoring of actual water use

### *Overlay requirement:*

The project shall achieve the following:

Indoor water use: Reduce predicted and actual municipal potable water or harvested groundwater use in the building by 30% compared to code (Energy Policy Act of 1992) for any fixture types and water consuming appliances referenced by that standard. The criteria may be met by any combination of: selection of low or no flow fixtures, use of alternatively sourced water, or other strategies.

Outdoor water use: Design and maintain landscape so that after a 2-year establishment period, the landscape uses 50% less municipal potable water or harvested ground water for irrigation than a base case landscape design. (Exception: annuals are exempt.) Any amount of site-harvested rainwater, storm water, or gray or waste water treated on site to tertiary standards may be used. The criteria may be met by any combination of: selection of native or low water use plants, use of alternatively sourced irrigation water as described, use of high efficiency irrigation systems, or other strategies. In order to verify compliance with this guideline during operation of the building it is necessary to sub-meter irrigation separately from indoor water consumption.

## Overlay Requirement 3: Renewable Energy

Meeting this requirement during design and construction will document compliance with the following items:

- Utilization of renewable energy

### *Overlay requirement:*

Project teams must implement a renewable energy system designed to meet at least 2% of the annual energy need of the project through on-site solar and/or wind renewable energy systems if determined cost-effective. Cost-effectiveness is achieved when the system-lifetime cost of on-site renewable supplied energy is less than that supplied by available utility. It may be necessary to supply more than 2% of the energy needs to meet Overlay Requirement 1: Meet SB 2030 Energy Standard.

## Overlay Item 4: Electric Vehicle Ready

Meeting this item during design and construction will document compliance with the following items:

- Electric vehicle charging capability

### *Overlay requirement:*

Provide Electric Vehicle Supply Equipment (EVSE) infrastructure to permit future electric vehicle charging for at least 20% of the parking provided by the project. If the project is providing 5 or less total parking spaces EVSE Infrastructure must be provided for at least one space. EVSE infrastructure shall consist of:

- Dedicated space for future electrical distribution equipment to support EVSE
- Raceway of at least 1" connecting the future EVSE parking space(s) to dedicated space above

Considerations for locations of EVSE should include the ability for accessible parking to access charging capability.

## \* Overlay Requirement 5: Construction Waste Diversion

Meeting this requirement during design and construction will document compliance with the following items:

- Diversion of construction waste from landfills and incinerators

### *Overlay requirement:*

Divert at least 75% (by weight) of construction, demolition, and land clearing debris from landfill and incinerator disposal.

## \* Overlay Requirement 6: Indoor Environmental Quality

Meeting this requirement during design and construction will document compliance with the following items:

- Indoor Environmental Quality

### *Overlay requirement:*

Projects must meet all of the following:

- Projects not regulated under the Minnesota State Residential Code must achieve ventilation rates of not less than that required by the Minnesota State Energy Code or ASHRAE 62.1, whichever is more stringent.
- Projects regulated under the Residential Code must meet the Residential Code Minimums or ASHRAE 62.2, whichever is more stringent.
- Projects must document a Construction IAQ Management Plan, including following the SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 2<sup>nd</sup> edition, if any portion of the building is occupied during construction.
- Document that the project is designed to meet the design, operating, and performance criteria of the most current version of ASHRAE 55.
- All newly installed interior materials must comply with the California Department of Health (CDPH) Standard Method v1.1-2010 and be certified as low-VOC. Interior materials are considered to be those within the least vapor-permeable most continuously-sealed layer.

## \* Overlay Requirement 7: Stormwater Management

Meeting this requirement during design and construction will document compliance with the following items:

- Stormwater Management

### *Overlay requirement:*

Sites with 1/4 acre or more of total land disturbance must meet the following three criteria:

- Water Quality Management: For a two-year, 24-hour rainfall event, provide treatment systems designed to remove 80% of the average annual post-development Total Suspended Solids (TSS) and remove 60% of the average annual post-development Total Phosphorus (TP), by implementing Best Management Practices (BMP's) outlined in "Urban Small Sites Best Management Practices" handbook (Metropolitan Council), "Protecting Water Quality in Urban Areas" (Minnesota Pollution Control Agency), or the "Minnesota Storm Water Manual" (Minnesota Pollution Control Agency). All BMP treatments systems for the subject site shall include safety factors, maintenance, and a back-up plan in case of failure. All manufactured devices require independent laboratory testing to confirm product claims.
- Volume Control/Infiltration: Maintain or increase infiltration rates from pre-project site conditions.
- Operation and Maintenance: All practices must have an Operation and Maintenance plan

## Overlay Requirement 8: Resilience in Design

Meeting this requirement during design and construction will document compliance with the following items:

- Resilient Design

### *Overlay requirement:*

Urban resilience, as defined by the Rockefeller Foundation, is “the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.” Building resilience is about making people, communities, and systems better prepared to withstand catastrophic events—both natural and manmade—and able to bounce back more quickly and emerge stronger from these shocks and stressors.

For the purposes of the Saint Paul Overlay, Priority Shocks and Priority Stressors are identified as:

### *Priority Shocks are:*

- Utility interruption: Partial or complete disruption of water, sewer, natural gas, and/or electricity service, evaluated during a period of extreme heat or extreme cold.
- Extreme rainfall: Precipitation equal to or greater than a 50-year, 24-hour (ATLAS 14) storm event.
- Transportation interruption: loss of passenger vehicle access to the building site for a period of 10 days.

### *Priority Stressors:*

- Water quality: Document positive impact to chloride and nitrates levels leaving the site, beyond the level required by other portions of this Ordinance and other regulations.
- Heat island: Document positive impact to building’s heat island effect, beyond the level required by this Ordinance and other regulations.
- Air quality: Document positive impact to air quality or the building’s response to existing and future outdoor air quality issues, beyond the level required by this and other regulations.

The design team must identify from the above list at least one Priority Shock and one Priority Stressor that could reasonably be expected to impact the project in the future. The design team must then develop at least one strategy to address the identified Priority Shock(s) and Priority Stressor(s) and integrate those strategies into the design of the project. Additionally, the design team will provide a *Resilience Plan*, a narrative that identifies the selected Priority Shock(s) and Priority Stressor(s) and describes the strategy/strategies adopted to address the them.

