INTRODUCTION

This guide provides background information related to the Net Zero Energy Plan Questionnaire required in Site Plan Review. Development proposals that require Site Plan Approval pursuant to Section 9.5 of the Salem Zoning Ordinance must include a completed Net Zero Energy Plan Questionnaire ("Questionnaire") Site Plan Review Application. A Site Plan Review Application is considered incomplete unless a completed questionnaire is submitted with the application. The Department of Sustainability & Resiliency has thirty (30) days from receipt of the completed Questionnaire to provide comments. Developers are encouraged to discuss this questionnaire as part of a "one-stop meeting" with Department heads.

The purpose of this questionnaire is to minimize the adverse environmental impacts in the design, construction, and occupancy of buildings in Salem, to ensure that the impacts of future climate conditions are carefully evaluated, and to ensure that future development aligns well with Salem's goal of achieving carbon neutrality by 2050.

PROCEDURE

A completed Net Zero Energy Plan Questionnaire must be submitted with a Site Plan Review Application for review and approval by the Planning Board. The Questionnaire should be completed by the registered architect.

BACKGROUND: ACHIEVING CARBON NEUTRALITY

In Resilient Together, Salem and Beverly's joint climate action and resilience plan, the cities outline the short-term and long-term actions that reduce greenhouse gas emissions to achieve carbon neutrality by mid-century while ensuring that our communities are resilient to the impacts of climate change. Reducing greenhouse gas emissions is critical to avoiding the worst impacts of climate change and to protecting the health, safety, and welfare of current and future generations.

To achieve carbon neutrality by 2050 and to minimize adverse environmental impacts, Salem will need to drastically reduce greenhouse gas emissions from electricity, buildings, transportation, and waste disposal. To meet these goals, all buildings within the city will need to pursue net zero emissions. New development should be designed to maximize envelope performance and energy efficiency, produce or procure renewable energy, and phase out fossil fuel use through electrification of building systems. The City of Salem recognizes that as technology advances, incorporating design elements to mitigate carbon emissions and increase resilience may become more feasible. Applicants are asked to devise strategies that permit building systems to adapt and evolve over time to further reduce greenhouse gas emissions and to avoid path dependency that perpetuates reliance on fossil fuels.

Background: Green Building Principles and Certifications

Designing buildings to use energy efficiently and minimize energy waste is an important first step in achieving net zero energy consumption. The Massachusetts Building Energy Code and Stretch Code set the baseline efficiency requirements for new buildings and green building certifications like Passive House, Leadership in Energy and Environmental Design (LEED), Living Future's Zero Energy, and Enterprise Green Communities also include energy performance benchmarks that help achieve net zero energy. The Mass Save Program provides incentives and guidance about how to maximize energy efficiency in buildings.

Background: Strategies for Achieving Net Zero Energy

Common strategies for achieving net zero energy include:

- Installing additional insulation to minimize energy loss
- Sealing the building envelope well to prevent air leakage
- Installing high-efficiency mechanical systems including heating, cooling, and ventilation, and high-efficiency lighting and appliances
- Orienting the building to maximize solar energy potential
- Controlling energy use through energy management systems or other technologies
- Installing high-efficiency air or ground heat pump heating and cooling systems
- Installing on-site renewable energy systems such solar photovoltaics, solar thermal, or purchasing renewable energy produced off-site

For more information about net zero energy buildings in Massachusetts, visit the Commonwealth of Massachusetts information page or read this March 2022 report from Built Environment Plus.

Background: Electric Vehicle Charging

The City encourages the installation of electric vehicle charging equipment and/or wiring to enable future charging equipment.

As of February 2022, National Grid has a program to pay the associated infrastructure costs of EV charging, including infrastructure needed to be "EV ready." Please consult with National Grid to determine if any installation costs could be covered through their Electric Vehicle Charging Station Program.

RESOURCES

For information on net-zero and resilient building and site design, please review the following resources:

- **Passive House Principles**
- **LEED Certification**
- **Architecture 2030 Palette (Net-zero design tools)**
- **Enterprise Green Communities**
- **LEED Green Building Certification**
- **International Living Future Institute's Zero Energy Certification**

For information on incentives and subsidies, please visit the **Salem and Beverly Energy Challenge** website.

For additional information visit https://www.salemma.gov/sustainability-and-resiliency

- **Resilient Together: Beverly and Salem's Climate Action and Resilience Plan**
  - See the Buildings & Development section on page 36 of the plan.
- **City of Salem Community Resilience Building Workshop Summary of Findings**

For more information on the Net Zero Energy Plan, please contact the City of Salem's Sustainability & Resiliency Department at 978-745-9595 ext. 41010