

XII. SUSTAINABILITY

INTRODUCTION

Sustainability

Sustainable development was defined by the Brundtland Commission in 1987 as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” While this is the definition most commonly used today, sustainability has been widely defined and often includes the triple bottom line concept. This approach attempts to balance the needs of people, profits, and planet, for both current and future generations. Sustainability involves broadening one’s field of thought and taking a systems approach. This also means extending one’s thinking temporally to include the longer term impacts that could potentially be obscured by short term gains.

Resilience

Resilience is a related term with goals often intersecting with those of sustainability. In this context, resilience refers to a community or a system within a community’s ability to maintain its functional integrity despite disturbances. A key feature of resiliency is adaptive management, meaning that plans can be modified to adapt to ever-changing conditions. In the face of global climate change, it is more important than ever that we are building resilience in our community. In practical terms, resilience can mean being better prepared for natural disasters, having a diversified energy grid, maintaining a high level of social capital among community members, or preserving a contingency strategy for the unexpected. These types of resilience help to ensure the long-term success of the community.

Sustainability and resilience are important concepts to consider in a Master Plan, because it is a planning exercise that highlights future municipal goals. We must make sure that our development does not interfere with the vision set forth in this plan. If we seek to pursue a vibrant, livable community that will withstand the test of time, we must consider whether our actions are sustainable. We must be able to accommodate changing times so we can be well-poised to face the challenges of the future.

HOUSING AND BUILDINGS

The physical buildings constructed in new development should incorporate green building standards to maximize their value to the community. The use of sustainably harvested or reused/reclaimed materials should be encouraged when possible. The design of buildings should incorporate maximum natural lighting and passive solar considerations. Energy star requirements should also be included in Town building codes. This may also include the redevelopment of brownfields or former industrial buildings left vacant. Although unrelated to construction, affordable housing is also an important sustainability factor related to buildings. Salem’s Workforce Housing provision helps ensure that affordable housing is available for low-to-moderate income families and creates a more livable community, however this remains a challenge

TRANSPORTATION

As a state, New Hampshire is heavily motor vehicle-dependent for our transportation needs. Statewide consumption of motor gasoline is 12,600 Mbarrels each year (U.S. DOE, 2015), and transportation accounts for 44% of energy expenditures in New Hampshire (Office of Energy and Planning, 2013). Reducing automobile dependence should be a major sustainability goal for Salem

as it will reduce the carbon footprint, air pollution, and traffic congestion while improving equity of movement for all residents. The Salem Bike-Ped Corridor is a perfect example of transportation sustainability efforts being pursued by Salem and the community. In addition, improving the safety and connectivity of bicycle and pedestrian infrastructure also enhances quality-of-life in the community.

Principles of pedestrian-oriented development and transit-oriented development should be implemented where possible in Salem's planning. These principles guide development surrounding transit centers and pedestrian access. In Salem, this might mean centering future development around the Bike-Ped Corridor and increasing connections to the corridor. Multi-modal connections, such as bicycle and pedestrian access to the Exit 2 Park and Ride facility would also be great contributions to Salem's transportation infrastructure.

ENERGY

Everything we do requires energy, and the majority of the energy we use today is sourced from fossil fuels. Carbon dioxide emissions from the combustion of these fossil fuels is altering our atmosphere and causing climate disruptions and fossil fuel resources are being depleted. It is clear that our world will not be powered by fossil fuels forever, and we have the technology available to us today to begin the transition to renewable energy.

The first step in moving toward a more sustainable energy future is increasing energy literacy among community members. Efforts should be made to educate the public about their energy use and how they can make simple changes in their own homes. Partnerships should be pursued with programs such as Button Up New Hampshire to host home weatherization and efficiency workshops. Another avenue for promoting energy literacy is through the school system. Either through special programs or incorporated into the regular curriculum, students should be learning about where energy comes from and how they can reduce their own energy use.

Beyond residential energy efficiency, the Town should strive to increase energy efficiency across all its functions. At the time of facility upgrades, energy efficiency improvements should be made whenever possible. A great example is the retrofitting of all the light fixtures in Town Hall to high efficiency LEDs. The Town should pursue LED upgrades to streetlights, as well. Weatherization and efficiency upgrades require a one-time upfront cost, but the benefits are felt for years to come in both cost and energy savings.

A diverse energy portfolio which includes localized, renewable sources will help better prepare Salem for whatever the future might hold. Localized, renewable energy can help reduce energy costs in the long run and keep energy dollars in the local economy, while at the same time creating a more resilient system and reducing our impact on the environment through the use of fossil fuel resources. The Town should actively pursue the integration of renewable, large- and small-scale energy sources, such as wind, solar, and geothermal, into the community's energy mix. The Town should pursue federal and state funding for renewable energy projects as well as working with local groups to create renewable energy incentives for residential and commercial landowners. For example, the State of New Hampshire's legislature enacted the Greenhouse Gas Emissions Reduction Fund (GHGERG), designed to support energy efficiency and renewable energy projects across the state.

CARBON DIOXIDE EMISSIONS

In order to better shape future goals, the Town should dedicate resources to conducting a comprehensive greenhouse gas inventory. The results of this inventory will provide a baseline level of emissions and allow the Town to set reasonable targets for the reduction of both community and municipal emissions. Efforts can then be directed toward reducing specific emissions categories, and results can be tracked over time. Reducing greenhouse gas emissions is a shared responsibility, and the Town of Salem should step up and demonstrate that the Town is doing its part to protect the community's resources.

WATER

Water is an undeniably essential resource. Climate disruptions will bring greater uncertainty of precipitation patterns, leading to periods of more extreme drought and also periods of more intense rainfall. Meanwhile, new development will increase the demand on the Town's water supply. For these reasons, the protection of Salem's water resources is more important than ever.

A comprehensive water plan should be developed for the Town. The simplest way to protect the water supply is to use less water. A number of methods can be used to achieve this goal in residential settings including: installing low-flow fixtures, utilizing drought-tolerant plants for landscaping, watering only at night, harvesting rainwater, and altering other water-use habits. Water-intensive industrial uses should be minimized or mitigated to the extent possible.

Recommendation 1 in the Rockingham Planning Commission's 2015 Regional Master Plan states that we should strive to, "decrease the amount of stormwater runoff by limiting impervious surfaces allowed with new development, requiring onsite treatment of stormwater runoff, and retrofitting existing development." Additionally, promoting the use of rain gardens and vegetated buffers can help protect surface waters from harmful runoff. The Town Planning Department and Board should take water use into consideration throughout the permitting process and possibly offer incentives for low-impact development.

Salem has experienced both flooding and drought, and is likely to continue facing both extremes. Salem's 2012 Hazard Mitigation Plan listed flooding as the greatest hazard based on a combination of probability and severity. Actions identified in the Hazard Mitigation Plan should be pursued to help minimize the human, property, and business impacts of flooding and other natural hazards. Mitigation and preparedness actions help make a community more resilient and protects our community resources.

FOOD

The daily choices we make in regards to food and diet have a strong influence on our health as individuals, the health of our communities, and the health of the environment. Local and community-based food systems provide quality food, strengthen the local economy, and build resilience. Salem should continue its commitment to preserving remaining active farmland. In addition, the Salem Farmers Market is a huge asset to the community and should be promoted as such. Efforts should be undertaken to ensure that the Farmers Market continues to be a source of fresh and local food for the community. For low-income families, SNAP and EBT cards are accepted forms of payments. The Town's wellness program provides CSA shares from Brookford Farm to Town employees. The program is intended to encourage employees to try new vegetables that they might not have tried before and to add more fresh vegetables to their diets while supporting a local NH farm. The Town

should also work to eliminate any unnecessary barriers to home gardens and consider an expansion of the already successful community garden program.

OPEN SPACE AND FOREST

Open space is critical to a healthy community. Continuous stretches of open space are important for wildlife habitat in an age when habitat is increasingly fragmented into small pieces not large enough to sustain a population. Intact ecosystems can provide ecosystem services such as water filtration, floodwater storage, nutrient cycling, and also serve as carbon sinks. Open spaces improve quality of life and allows for healthy recreational uses. Open space must not be dismissed as 'wasted space'. Remaining open space should be protected through efforts such as Salem's Open Space Preservation section already in place within the Zoning Regulations. The Salem Conservation Commission has demonstrated a strong commitment to protecting the Town Forest and to acquiring additional land to expand the forest. Once land is developed, it is very rarely returned to open space, making it critical to protect our remaining natural areas.

SMART GROWTH

Salem's land use plan already contains several goals relating to sustainability and smart growth, although they are not labeled as such. Smart growth, according to the United States Environmental Protection Agency (EPA), is planned economic and community development that protects our overall health and environment. These efforts would not only make Salem more attractive, but also pave the way for a stronger economic and socially diverse community. For example, the Master Plan includes language supporting higher density housing areas and a goal to "promote the redevelopment of obsolete, abandoned, and underutilized commercial properties." The Town should continue such efforts to reduce sprawl and preserve open space. The provision of a density bonus incentivizes more sustainable development patterns. The Depot Village Overlay District is another example of sustainable land use planning. One of the stated purposes of the overlay district is to, "encourage development in the Depot of a mixed-use environment that is less automobile dependent and more pedestrian friendly." The Town should continue to more aggressively pursue goals such as these to help shape a more sustainable community.

WASTE

The Salem Transfer Station has a mandatory recycling and yard waste policy under Town Code which separates these materials from other waste. The Transfer Station offers single-stream recycling making it easier for everyone to participate. Recycling drastically reduces landfill waste and saves the Town \$57 per ton. Expanding the yard waste composting program to also accept food waste could help divert another large segment of landfill waste. In addition, the Town could recoup some of the costs of implementing such a program by selling the finished compost. Community education and incentive programs could help build interest and support. Backyard composting can be encouraged in some of Salem's more rural areas, but a municipal service will be necessary for people living in more densely populated districts. New Hampshire may eventually follow the lead of neighboring states and require that all food waste is diverted from landfills and into compost. In that case, it would be beneficial for Salem to be ahead of the curve and have more time to carefully implement such a program.

ADVISORY GROUP

The Town of Salem should develop a “Sustainable Salem” advisory group made up of community members and representatives from the Planning Board and Conservation Commission. The purpose of this group would be to serve in an advisory role to Town decision-makers regarding issues of sustainability. The group would also work to educate the community through outreach activities and events. Sustainable Salem would work hand-in-hand with already established groups such as the Friends of Salem Bike-Ped Corridor, Conservation Commission, the Salem Farmers Market, the Greater Salem Chamber of Commerce Green Committee, and others. This group would provide an opportunity for residents to participate in the Town, share their ideas, and be the driving force for sustainability efforts.

CONCLUSION

The implementation of sustainability initiatives can help ensure that Salem remains a thriving community well into the future. Sustainability requires public support and community participation in order to be successful. The process is as much about developing a culture of sustainability as it is about achieving any one particular benchmark or goal. Sustainability is not only about protecting the environment; it also means creating livable communities where people can lead successful lives. It would be prudent for the Town to continue developing a sustainability plan as resources allow. These goals should be a priority for Salem as the Town continues in the direction of a bright future. Sustainability is not a set destination, but rather an incremental process. Each step in a sustainable direction is a positive step for Salem.

SOURCES

- *Report of the World Commission on Environment and Development: Our common future; Brundtland Commission, 1987.*
- *Energy in NH; Office of Energy and Planning, 2013.*
- *This Is Smart Growth; US Environmental Protection Agency, 2006.*
- *State of New Hampshire energy sector risk profile; U.S. Department of Energy, 2015.*