



Islands Trust

FACT SHEET

The Land Use-Greenhouse Gas (GHG) Connection

How can land use decisions impact GHG emissions?

As land use is a key driver of GHG emissions, shifting land use patterns is one of the most effective ways to reduce a community's carbon footprint. Studies have quantified the land use-GHG emission relationship – offering strong evidence that the physical arrangement of roads, buildings, and land use types directly influence GHG emissions.

Clustered and complete communities

Clustered and complete community form – including mixed residential-commercial uses, increased densities in appropriate locations, and road network connectivity – can reduce residents' need to drive while at the same time increasing the convenience and viability of alternative forms of transportation.

Building Design

Community design and land use can also substantially lessen residential and commercial building energy consumption through smaller living spaces, shared walls, and district energy systems. Per capita energy consumption and GHG emissions are 2 – 2.5 times higher in low density development.

Green Infrastructure

The GHG impact of green infrastructure and landscaping has been less extensively studied; however, this aspect of land use represents another important opportunity for emissions reductions. For example, green infrastructure – including shade trees over buildings and roads for natural summer cooling, retention of forest cover, trees and greenery that insulates and breaks wind flow during the winter, green roofs, and community green spaces – can further reduce building energy use and act as carbon sinks.

Ecosystem Protection

The forests and eelgrass in the Islands Trust Area play a significant regional role in mitigating climate change. Through protecting and stewarding forests and eelgrass, Islands Trust Area communities and landowners have an important role in preventing climate change.