



Infrastructure – A Critical Investment in Vermont’s Future

A new interactive tool shows where infrastructure investments are needed to address Vermont’s housing, climate, and economic challenges

by Jeffrey Lubell¹

To provide the housing stock needed to address Vermont’s growing housing affordability challenges and allow Vermont businesses to grow, the state needs a lot more housing. But where should it go and what can the state do to facilitate it?

For many reasons, it makes sense to focus the development of new housing on areas within a close commute of major employment centers. These are the areas with the greatest demand for housing and where employers need more housing in order to place the workers they need to expand their businesses. Putting housing within a close commuting distance of job centers also helps to reduce the number and distance of necessary car trips, advancing Vermont’s climate goals by reducing vehicle miles traveled and corresponding energy use and greenhouse gas emissions. In large part because the private market has not supplied enough housing to meet workers’ needs, these areas often have very high home prices and rents. Increasing the supply of housing to meet the demand in these areas would help to slow the growth of home prices and rents, making Vermont more livable and attracting more residents to help the state grow. The inclusion of affordable homes within this new development would help ensure that people of all incomes can afford to live in these job-adjacent places.

As illustrated by a new interactive [tool](#) created by the planning firm Civic Atlas in partnership with the educational nonprofit Homes for Norwich, a key obstacle to a major expansion of housing in these job-adjacent areas is the limited availability of water and wastewater infrastructure. Take a look and see for yourself!

NOTE: For the text that follows, feel free to follow along in the map or just read the text. The import should be clear either way.

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Burlington Area

Open up the [tool](#) and zoom in on the Burlington area until you can see the individual hexagons that make up Burlington and surrounding cities and towns. Each hexagon represents an area of about 0.22 square miles. Hover over a hexagon and it will tell you how many jobs are accessible within a 10, 20 or 30-minute commute. By default, the color coding is keyed to a 10-minute commute, but you can adjust it. Add in town boundaries by clicking on the appropriate button.

With a 10-minute commute selected, all of the hexagons in Winooski and most of the hexagons in South Burlington are dark blue. So are parts of Burlington, Williston, Colchester and Essex. These are the areas that are most accessible to jobs in the state – each has 62,500 or more jobs accessible within just a 10-minute commute. The next two shades of blue (23,000 – 62,500 jobs within a 10-minute commute) also reflect job-rich areas and extend to cover all of South Burlington, nearly all of Burlington, most of Williston, and large areas within Colchester and Essex and parts of Shelburne and St. George.

Click on the sewersheds button, which shows the EPA-modeled areas covered by public wastewater systems. It overlaps reasonably well with these job-rich areas, but there are still parts of Colchester, Williston and Shelburne that are within a 10-minute commute of a lot of jobs but are not within the modeled public wastewater service areas. **While all of the 106 hexagons in the Burlington region within a 10-minute commute of 62,500 or more jobs have access to public wastewater systems, some 16 percent of the 75 hexagons within a 10-minute commute of 40,000 to 62,500 jobs and 35 percent of the 139 hexagons within a 10-minute commute of 23,000 to 40,000 jobs do not have access to public wastewater systems.**

Now, change the commute time to 20 minutes – still a very manageable commute. In this view, the darkest blue areas each have more than 82,500 jobs within a 20-minute commute. **Nearly half (46 percent) of the 618 hexagons within a 20-minute commute of 82,500 or more jobs and 87 percent of the 512 hexagons within a 20-minute commute of 30,000 to 82,500 jobs do not have access to public wastewater systems.** Despite being within a short commuting distance of large numbers of jobs, they cannot support new housing development at a density sufficient to meet Vermont's needs because they lack wastewater capacity.

Upper Valley

Turn off the sewersheds, reduce the commute time to 10 minutes, and start scrolling down the rest of the state. While there are no hexagons in the darkest two shades of blue on this map outside of the Burlington area, there are hexagons in the third-darkest shade of blue (23,000 to 40,000 jobs within a 10-minute commute) in just one other region within Vermont – the Upper Valley, a bi-state region anchored by White River Junction, VT and Hanover and Lebanon, NH.

Here, you'll see hexagons in Hartford that have as many as 28,000 jobs and hexagons within Norwich that have as many as 35,000 jobs within just a ten-minute commute. Norwich may have a tiny population, but it is highly job accessible, within a short commute of White River Junction, Hanover, and Lebanon. Turn on the sewersheds and you'll see that parts of the dark-shaded areas in Hartford are served by a public wastewater system while other parts are not. **While part of Norwich is served by a public water system, the town does not have a public wastewater system. In all, nearly 43 percent of the 56 hexagons in the Upper Valley that are within a 10-minute commute of 23,000 to 40,000 jobs lack access to a public wastewater system.**

Switch to a 20-minute commute, and now the areas in the third-darkest shade of blue (30,000 to 55,000 jobs within a 20-minute commute) include most of Hartford and Norwich and parts of Hartland, Thetford, Sharon and Windsor. **More than three-quarters (78 percent) of the 359 hexagons in the Upper Valley within a 20-minute commute of 30,000 to 55,000 jobs lack access to public wastewater**, making it difficult to support dense housing. Most of this area also does not have a public water system.

Other Parts of Vermont

Switch back to a 10-minute commute and explore other parts of Vermont. Though they lack the job density of the Burlington area or the Upper Valley, several other parts of Vermont have large numbers of jobs that drive housing demand. The Montpelier-Barre and Rutland areas both have hexagons with the fourth-darkest shade of blue (12,000 to 23,000 jobs within a ten-minute commute), while Bennington, Brattleboro, Lyndon, Middlebury, Springfield, St. Albans, St. Johnsbury, and the Stowe-Morristown area have jobs in the next tier down (5,000 to 12,000 jobs within a 10-minute commute).

Expanding infrastructure to meet Vermont's Needs

The rising costs of housing have elevated housing to a top-tier political issue in Vermont. Growing Vermont's economy and reducing greenhouse gas emissions are also top-tier political issues in the state. A key solution to all three problems is to expand Vermont's water and wastewater infrastructure to enable the construction of more housing within a close commuting distance of major job centers. Some existing water and wastewater systems may also need to be upgraded to handle more intensive development in job-adjacent areas.

The recently adopted Community and Housing Infrastructure Program (CHIP) is an important step in the right direction. It will help facilitate the connection of new housing to existing water and wastewater systems. But it's not designed to create new water and wastewater systems where they don't currently exist or to facilitate wholesale expansions of existing systems into neighboring municipalities. While Vermont has existing programs aimed at funding new infrastructure, they have not to date produced enough infrastructure to meet Vermont's needs, and they are unlikely to do so in the near future. One reason is that they assume that small towns that lack the capacity to manage a major infrastructure project will incur very large amounts of debt to fund infrastructure that will mostly benefit people who do not currently live there. This is simply unrealistic.

State financing and management of new infrastructure investments

A better solution is for the state to determine where infrastructure is needed to meet the state's housing, economic and climate goals, and then install it directly. The state is much better positioned than small towns to finance and manage such infrastructure investments. Many towns that might balk at raising the needed funding and managing the projects themselves might be open to accepting the infrastructure if the state handled the financing, installation, and ongoing maintenance.

The housing associated with this infrastructure would generate revenue that could be captured to help pay for the infrastructure costs. With more housing, employers could expand, bringing new residents to the state. New residents would bring more tax revenue, which could support repayments on bonds floated to pay for the infrastructure costs. In addition, users of the infrastructure – including both existing and new residents – would pay user fees that would further help to defray costs.

While it's true that the state currently does not have a large enough public works department to handle this installation and maintenance, it is equally true that the towns without infrastructure lack this staff capacity. Which is likely to be more efficient – expanding the capacity of the state's public works department to handle this load for the

state, or trying to separately create this capacity in up to a dozen small towns? If the state prefers to manage this infrastructure on a regional basis, it could enlist the regional development corporations and regional planning commissions to serve as regional managers for infrastructure projects the state funds. The state could also create incentives for towns with existing water and wastewater systems to extend those systems to adjoining municipalities. Whether managed regionally or at the state level, these infrastructure investments can be managed efficiently only at a level broader than individual municipalities.

Centralizing water and wastewater infrastructure at a scale larger than individual municipalities is not uncommon across the U.S. States have adopted different institutional arrangements depending on their geography and settlement patterns: Alaska maintains statewide capacity to help small rural communities develop and deliver water and sewer projects; Massachusetts and Maryland have created large regional public authorities that finance, construct, own and operate infrastructure serving dozens of municipalities and millions of residents; and large counties such as Fairfax County, Virginia, operate integrated wastewater systems serving populations substantially larger than Vermont's.

Vermont's low population density makes a single interconnected statewide utility impractical, but it strengthens rather than weakens the case for centralizing professional capacity. The state does not need a single statewide pipe network in order to maintain a statewide team capable of identifying priority investments, financing and procuring projects, constructing regional or local systems, and operating them directly or through regional entities. The alternative is to expect numerous small municipalities to independently develop engineering, financing, procurement and utility-management capabilities that the state could provide more efficiently and effectively.

Conclusion

I hope you'll spend some time with the [tool](#) exploring the geography of jobs and infrastructure in the state. Then, let's find a way to elevate the critical issue of infrastructure investments and capacity on the state's agenda. There are few things the state could do that would be more effective in addressing the state's housing, climate, and economic development goals.

About Homes for Norwich

[Homes for Norwich](#) is a 501(c)(3) non-profit organization that works to expand awareness of the need for more housing options in Norwich, VT and to advocate at the local and state level for policies that increase housing affordability in Norwich.

About Civic Atlas

[Civic Atlas](#) helps local governments, nonprofits, and developers turn public records into usable data — pairing a decade of planning experience with modern AI.

Methodology

The Vermont Job Access and Water Infrastructure [tool](#) was developed by John Devine of Civic Atlas based on input from board members of Homes for Norwich. The methodology is described [here](#). The water and wastewater sheds are mapped from publicly available data, which in some cases are modeled. If you see any mistakes in the data, please [let us know](#).