



# NEW HAMPSHIRE

STATE-WIDE ANALYSIS



# URBAN3

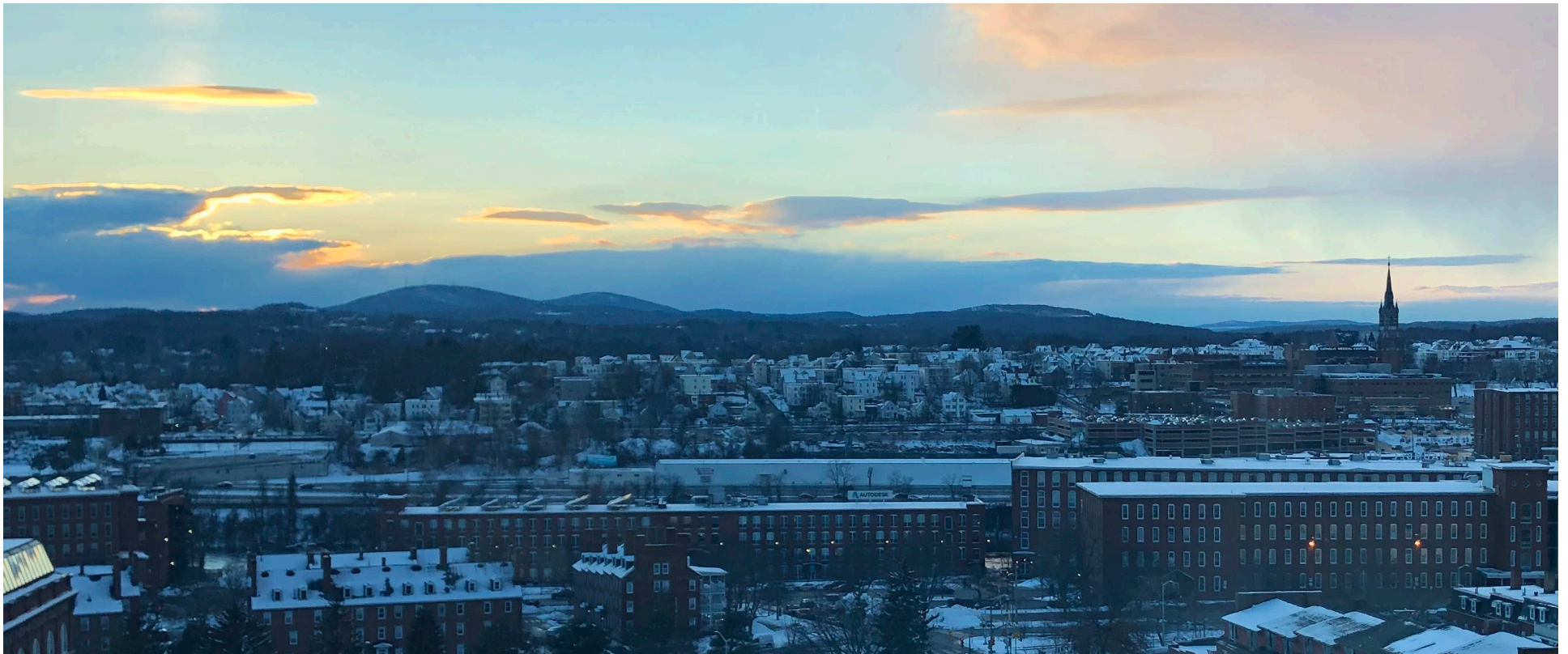
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# INTRODUCTION

Once the domain of the Abenaki Nation, the State of New Hampshire has a history of making the most of its available resources and reinventing itself. In the late 1800s booming textile and manufacturing industries flourished in the south while lumber milling reigned in the north. The Great Depression proved too great an obstacle for most industries and production waned. Old textile mills were taken over by modern manufacturing operations, but by the 1960s New Hampshire, along with the rest of the United States, experienced the steep decline of heavy industry. More recently, technology and innovation companies have grown in downtowns, especially in larger cities. Smaller towns have used their resources to build real estate and tourism enterprises that welcome millions of visitors every year. Part of what helps New Hampshire grow are decisions to adapt to change and use land more efficiently. Land is a finite resource and its use can either produce high enough property tax revenues to support resident needs, or drain city funds for infrastructure upkeep. In this report we look at how community wealth and development are connected, from the Seacoast to the North Country.

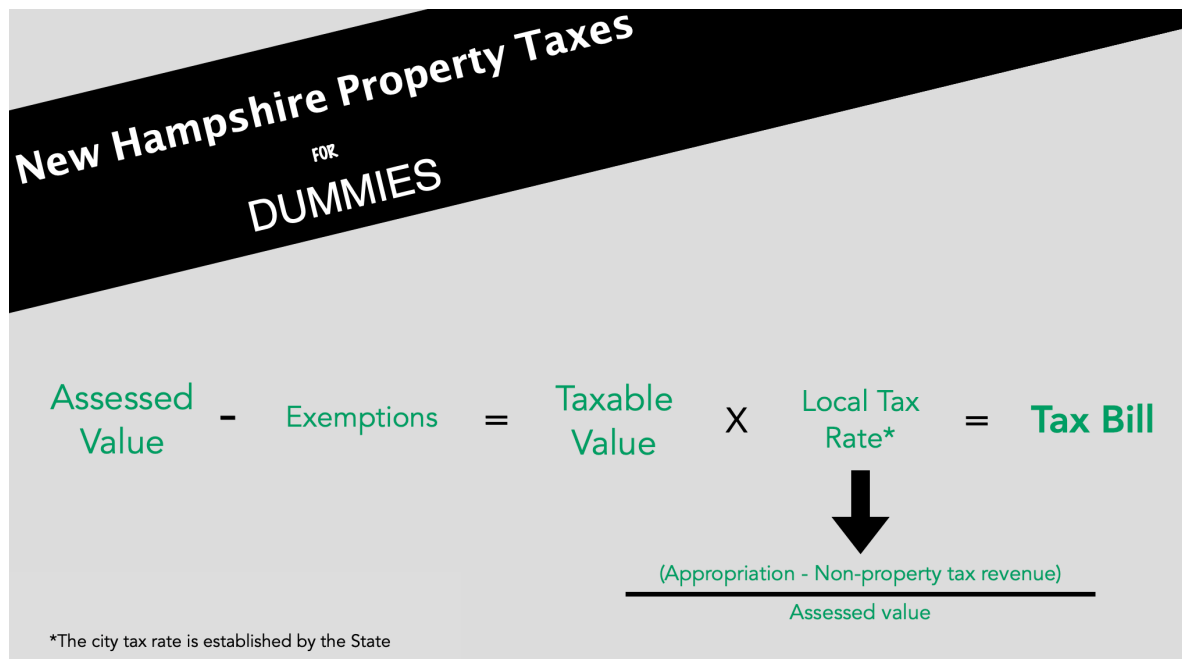


# NEW HAMPSHIRE

## TAX SYSTEM TIPS

Property taxes are a key revenue source for many local governments in the United States. New Hampshire is one of the most property revenue-dependent states. The formula for calculating a property tax bill in New Hampshire is shown below. The New Hampshire Department of Revenue Administration is responsible for completing the equalization process in which property value is adjusted to account for differences in valuation years to ensure fair taxation across jurisdictions. However, because equalization changes year to year, it can distract from the message that the underlying value of buildings and land is fairly stable over time. To focus on the study goal of evaluating the productivity across development patterns, equalization values were not included in the numbers shown. Within a community, values remain relative to each other regardless of equalization. The meaningful comparison between communities is not of exact values, but the overall shape of the model, which reveals the relative productivity of land use patterns.

Mapping property tax production is tantamount to mapping how cities and towns pay for municipal services, like police and fire protection, the school system, and infrastructure. When property value varies geographically, we can make comparisons between other spatially relevant factors such as patterns of development, demographics, and public investment. Put simply, how land is used directly affects its tax productivity. As such, analyzing the value that is the source of government revenues is critical to planning a strong financial future.



### 2019 TAX RATES

### PER \$1000

Berlin.....	\$39.82
Claremont.....	\$40.26
Concord.....	\$27.78
Dover.....	\$25.19
Exeter.....	\$23.27
Hanover.....	\$18.45
Hudson.....	\$20.28
Keene.....	\$37.60
Laconia.....	\$20.59
Lebanon.....	\$30.37
Nashua.....	\$21.76
Pelham.....	\$19.04
Peterborough.....	\$29.75
Portsmouth.....	\$14.86
Rochester.....	\$12.22

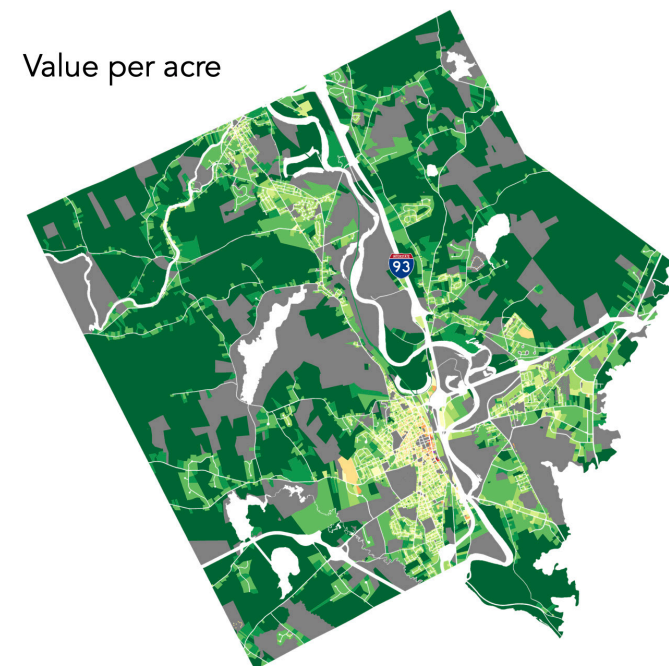
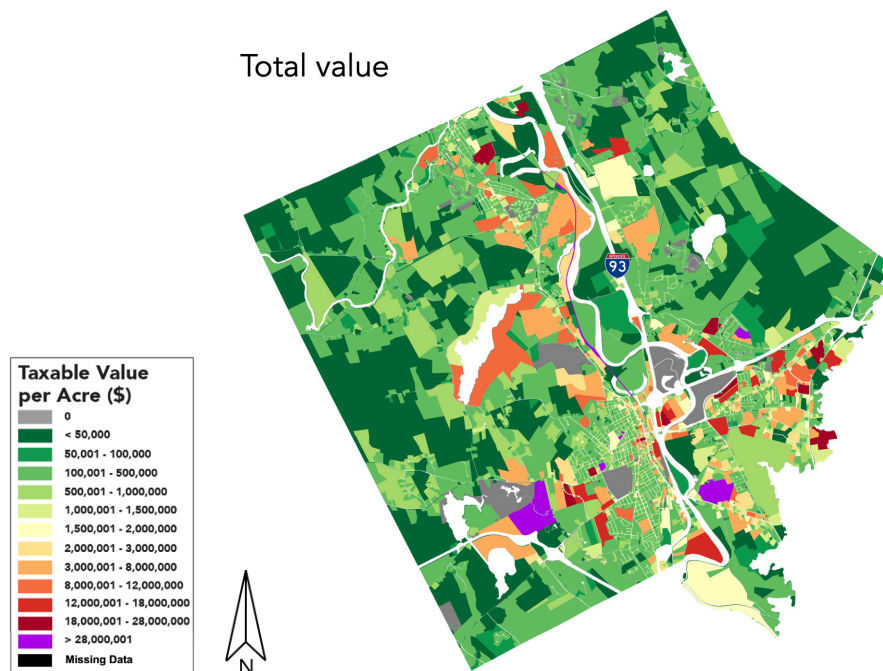
# NEW HAMPSHIRE

## WHY VALUE PER ACRE

Urban3's analysis focuses on the "per acre" metric as a unit of productivity. After all, cities and counties are, at their simplest, finite areas of land, and how that land is used has a direct effect on municipal coffers. This metric normalizes total revenues and tax values into a direct "apples-to-apples" comparison, utilizing land consumed as a unit of productivity. Put another way, different cars have differently-sized gas tanks, so the gallon is used as the standard measure, not the tank. Therefore, "miles per gallon", not "miles per tank" is common practice to gauge efficiency. We apply the same principle to measure the financial productivity of various development types across a community.

Expansive developments with large footprints (like a sprawling subdivision) are typically more expensive to service with public utilities (streets, water and sewer). Thus, examining a development's total tax production overlooks the amount of land and other public resources consumed in order to produce revenue. Nevertheless, many cities use a total value map, like the one to the left of Concord, NH, to inform land use decisions.

In contrast, the map to the right illustrates how dividing total value by total acreage identifies the lower-efficiency areas (dark green) near the periphery and the concentrations of higher-efficiency parcels (dark red and purple), typically near historic centers and traditional, non-interstate corridors. This metric more accurately measures how well a city or county uses its chief finite resource: land.





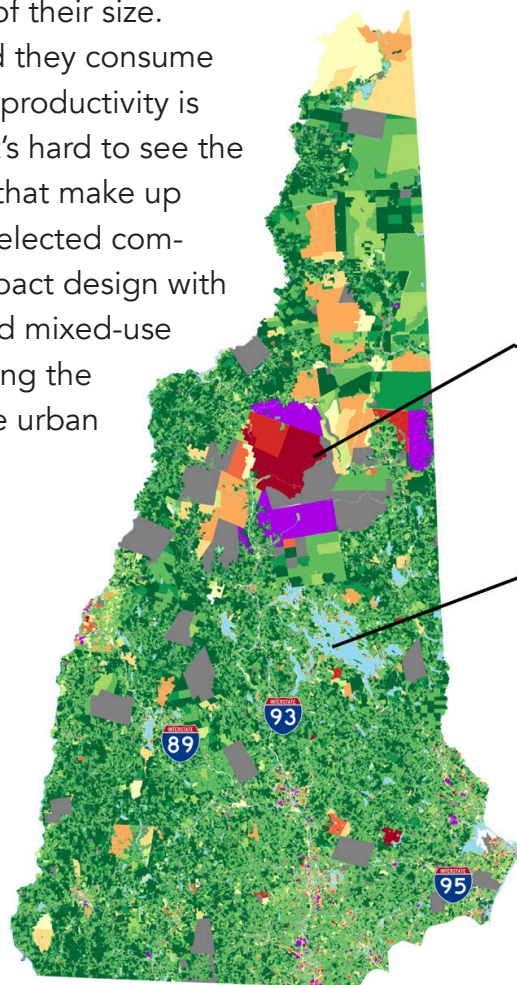
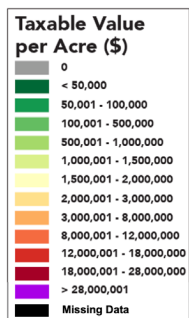
# NEW HAMPSHIRE

## STATE-WIDE ANALYSIS

The total value map for New Hampshire shows large parcels in the northern half of the state and a trail of commercial properties along I-93 as highly valuable and in shades of orange, red, and purple. When mapped by value per acre, these large, undeveloped parcels fade to green, or turn gray because of their nontaxable status. The more urban areas in the southeast change to warmer shades like yellow and orange. Large parcels often appear valuable because of their size. However, when the land they consume is considered, their low productivity is revealed. At this scale it's hard to see the tiny productive parcels that make up the downtowns of the selected communities, but their compact design with multi-story buildings and mixed-use are effective at generating the value that's visible in the urban southeast.

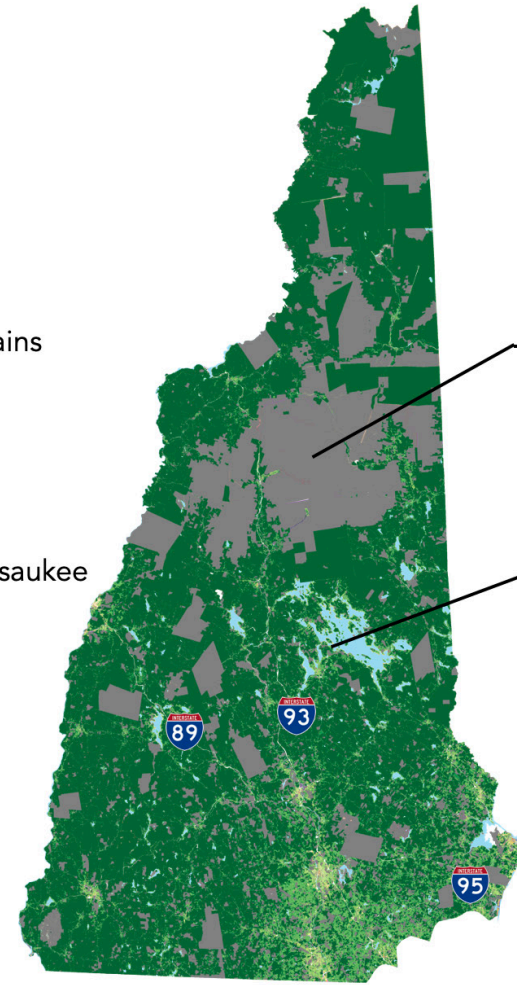
Total value

Value per acre



White Mountains

Lake Winnepesaukee



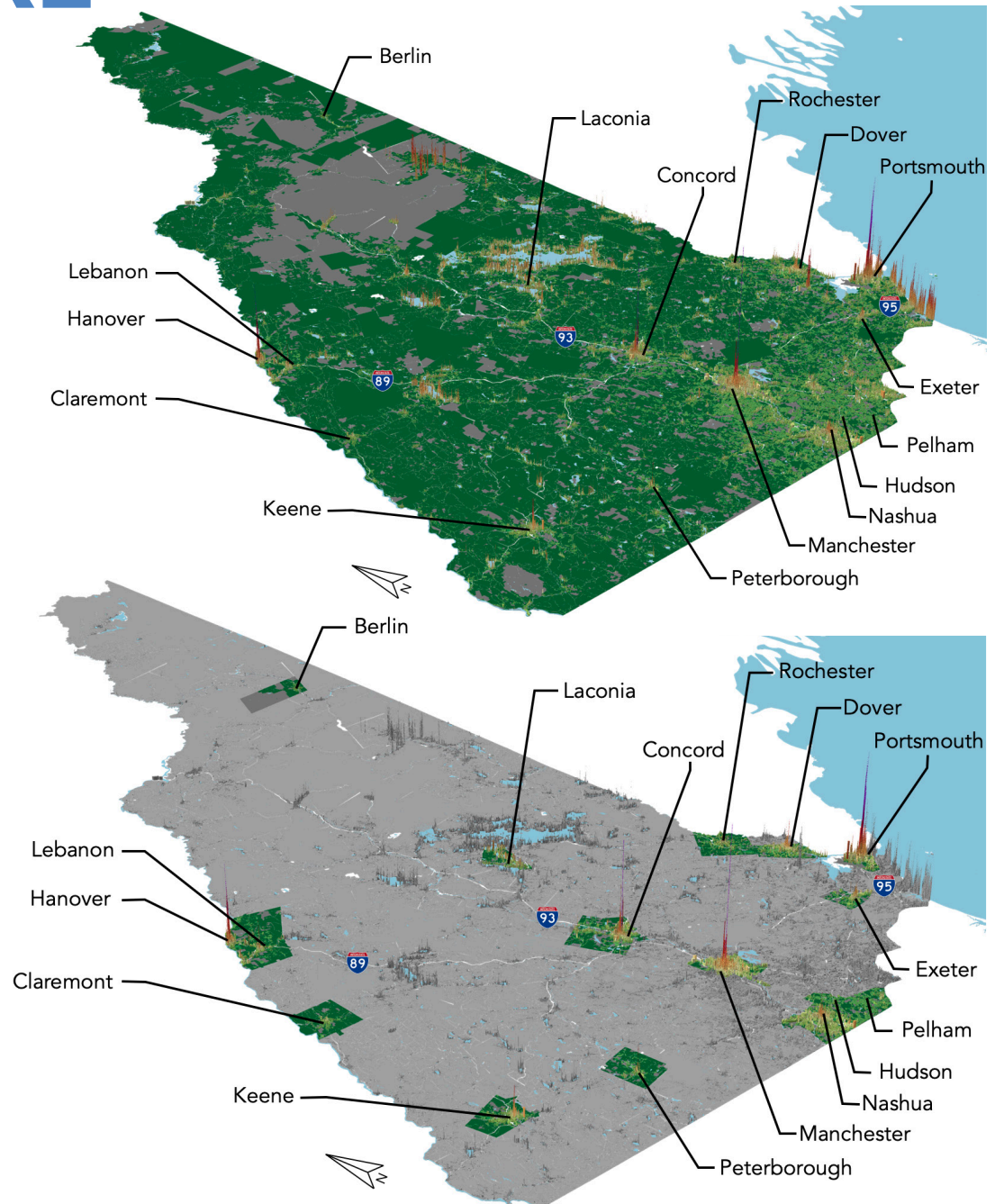
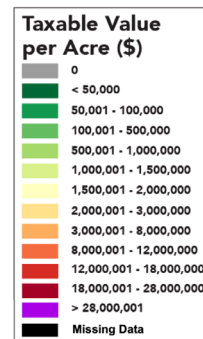
White Mountains

Lake Winnepesaukee

# NEW HAMPSHIRE

## STATE-WIDE ANALYSIS

In 3D the differences in productivity among the selected communities becomes more apparent. Portsmouth has the highest peak VPA and a very productive downtown. Communities that follow I-93 north like Nashua, Manchester, and Concord also have strong downtowns. Other cities and towns that are more isolated, like Keene, have a visibly productive downtown, but lack the magnitude of their more developed counterparts. Smaller towns that have potential for a stronger downtown lack spikes in the model, but have opportunities to grow. New Hampshire is a fairly rural state with lots of land reserved in national forests and state parks. Existing urban development must serve as the foundation for intensifying land use and increasing revenue.

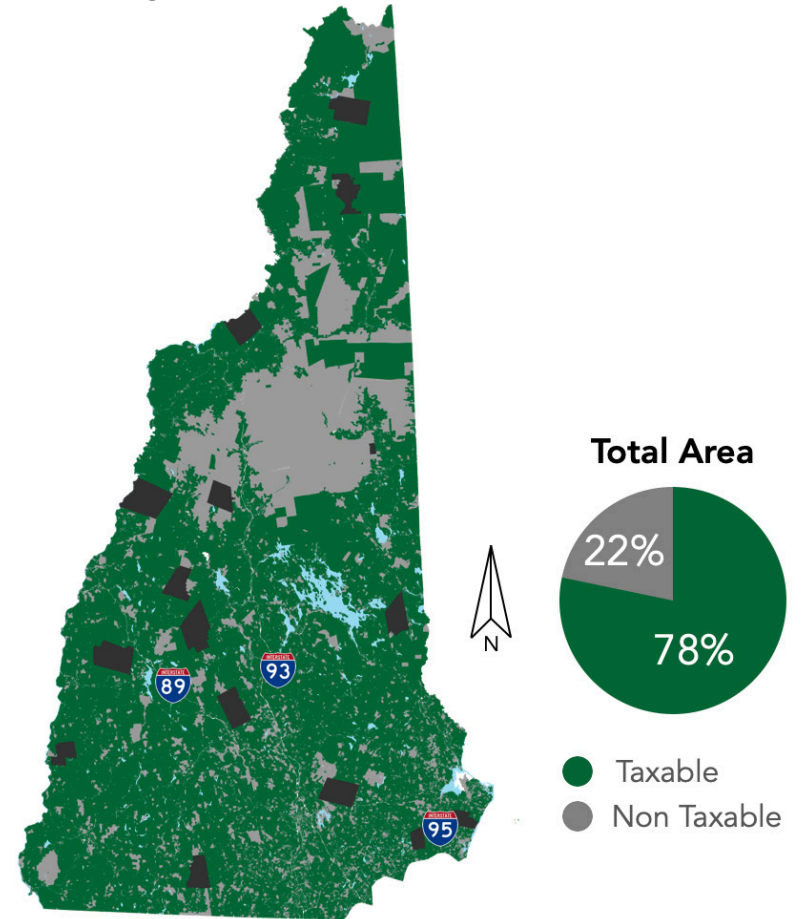
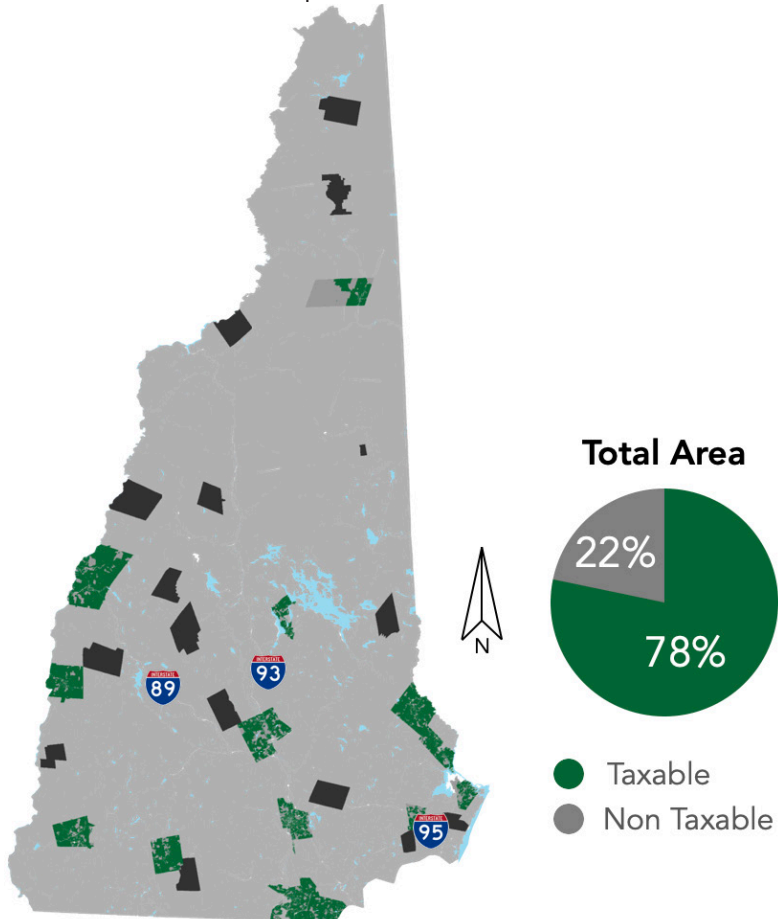




# NEW HAMPSHIRE

## STATE-WIDE ANALYSIS

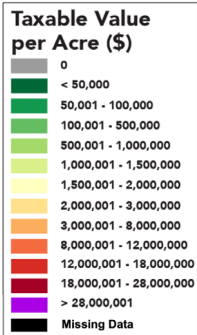
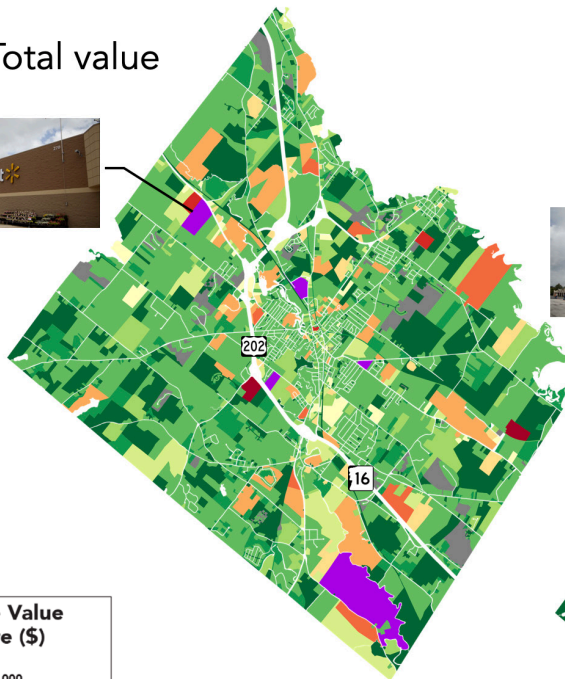
Our state-wide data for mapping did not include the data for several smaller communities in dark gray in the map to the left. None of these towns were selected for the study, but it's important to note that the properties are there and paying taxes, but were unable to be mapped, and thus skew state-wide stats to a degree. The missing data accounts for 5.25% of New Hampshire's total land area. The map to the right shows the distribution of taxable land (green) and nontaxable land (gray) in New Hampshire. 78% of the land within New Hampshire is taxable and 22% is nontaxable. This balance gives the community a considerable amount of land to work with, but development should be focused on building density in downtowns. Considering the balance of taxable and nontaxable land is important when it comes to development decisions that affect how much land is available to generate revenue.



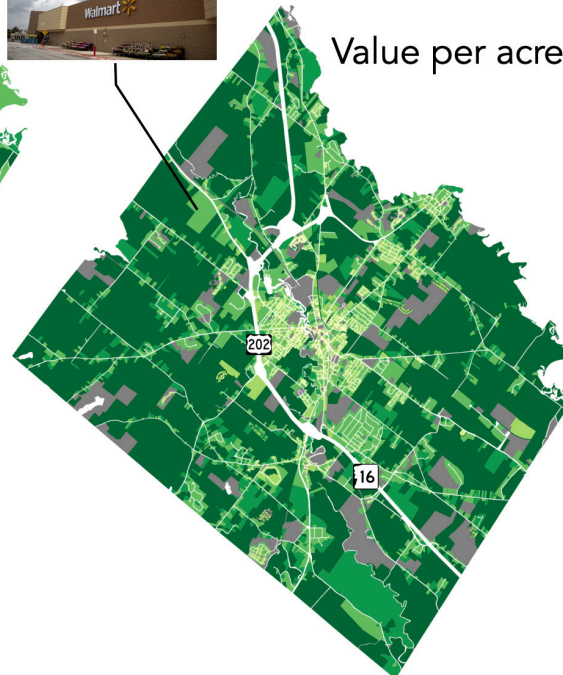
# ROCHESTER

The total value map for Rochester shows large big-box properties northwest of U.S. Rte 202, like Walmart, as high value and in red and purple. However, when mapped by value per acre, the big-box store properties are revealed to be low productivity and fade to green while downtown Rochester changes to warm colors. Vast parking lots and inexpensive building materials contribute to the low productivity of a typical big-box store.

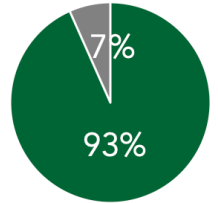
Total value



Value per acre



Total Area

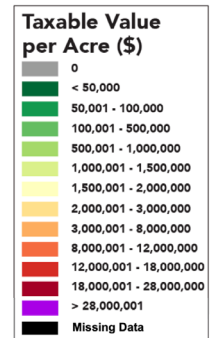
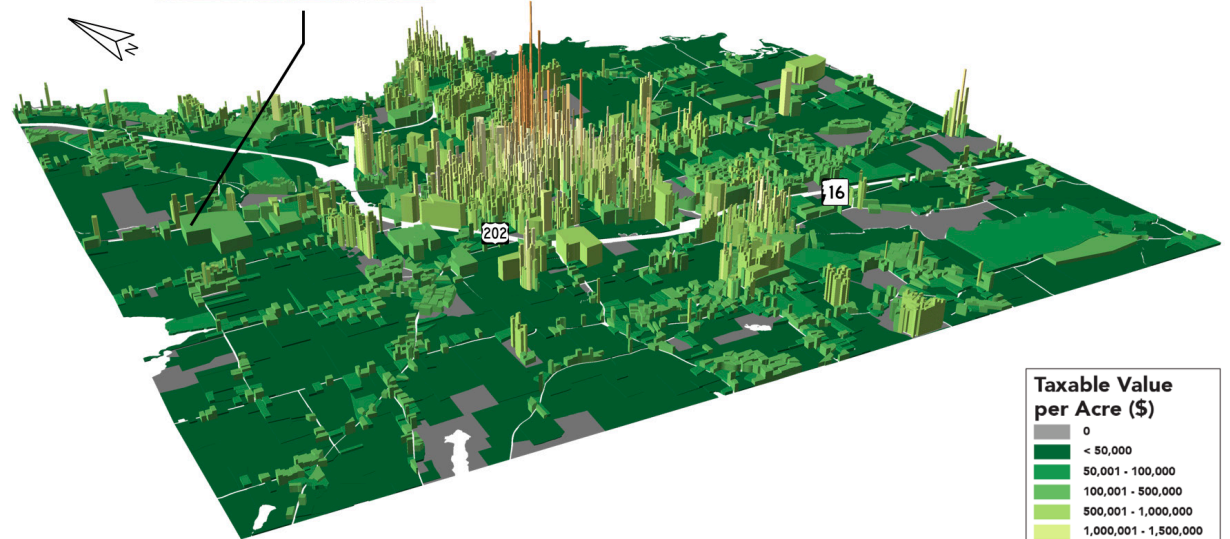


- Taxable
- Nontaxable



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Rochester. 93% of the land within Rochester is taxable and 7% is nontaxable. This balance gives the community a considerable amount of land to work with when it comes to working on projects that intensify land use and build density. Considering the balance of taxable and nontaxable land is important when it comes to development decisions that affect how much land is available to generate revenue, particularly in the downtown area.

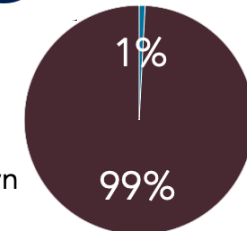
The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Rochester uses 1% of Rochester's land to generate 8% of Rochester's value. This 1:10 ratio means that, relative to its size, downtown Rochester is 10 times more productive than all of Rochester. This ratio is a sign of a healthy downtown, but there is always room to improve. Refurbishing historic mixed-use buildings and transforming large surface parking lots in downtown into new development would create new spikes of value in the 3D model.



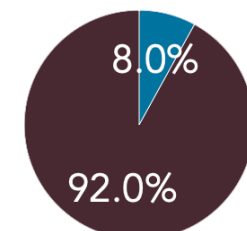
# 1:10

DTown  
City

Area

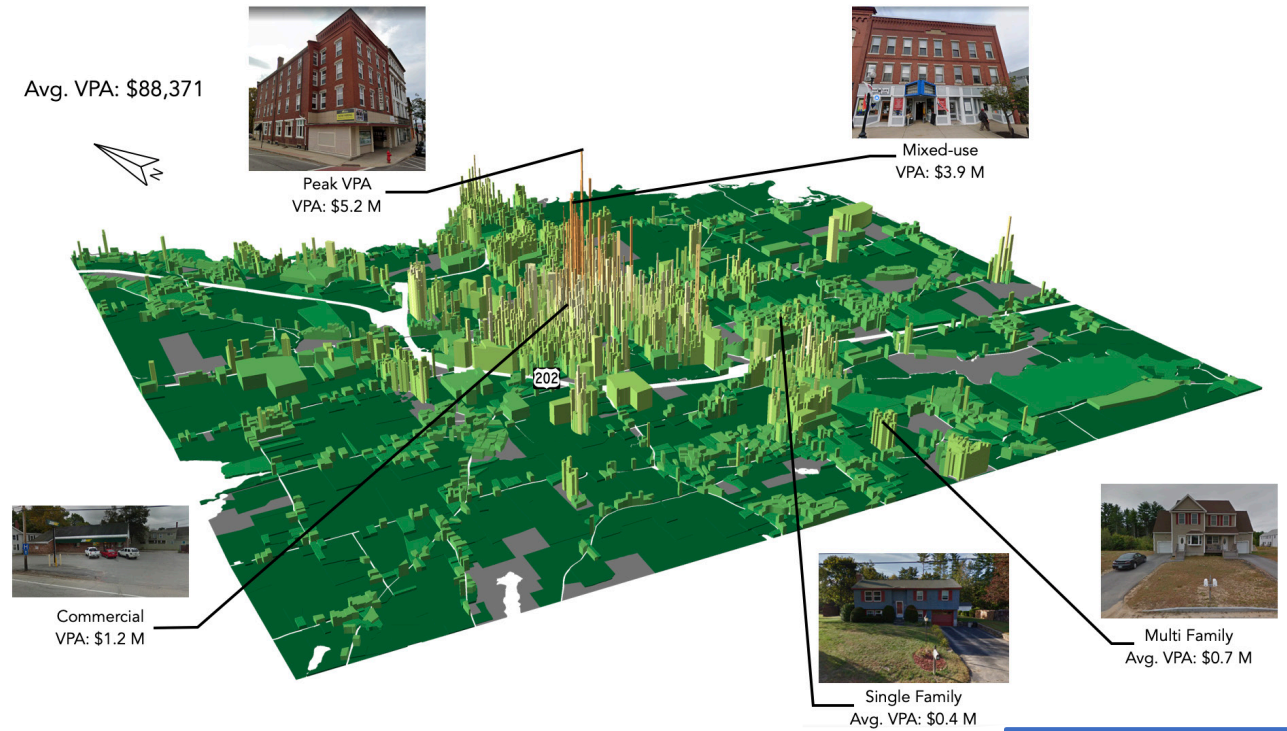


Value

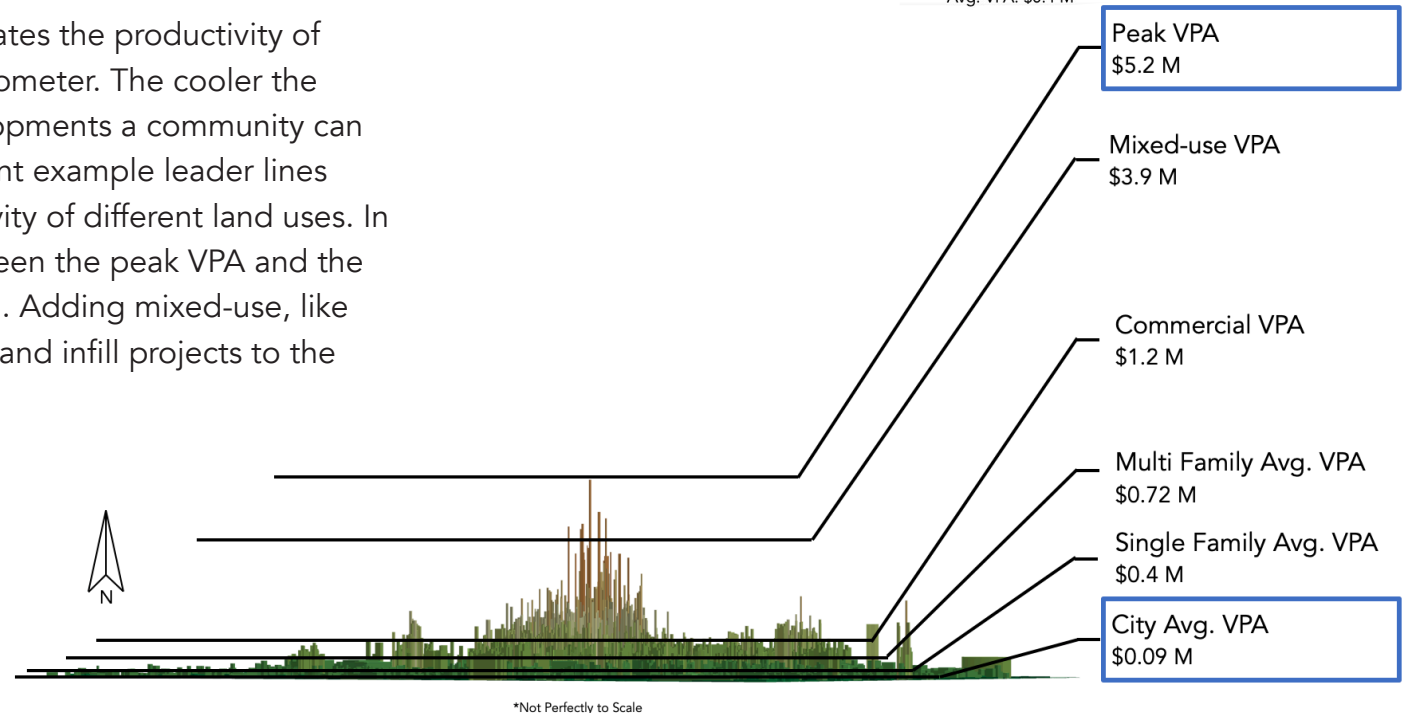




The map to the right highlights examples of typical buildings and developments in Rochester that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The VPA of a typical mixed-use example is nearly three times the VPA of a typical solely commercial property. Adding a residential component to a building increases value.

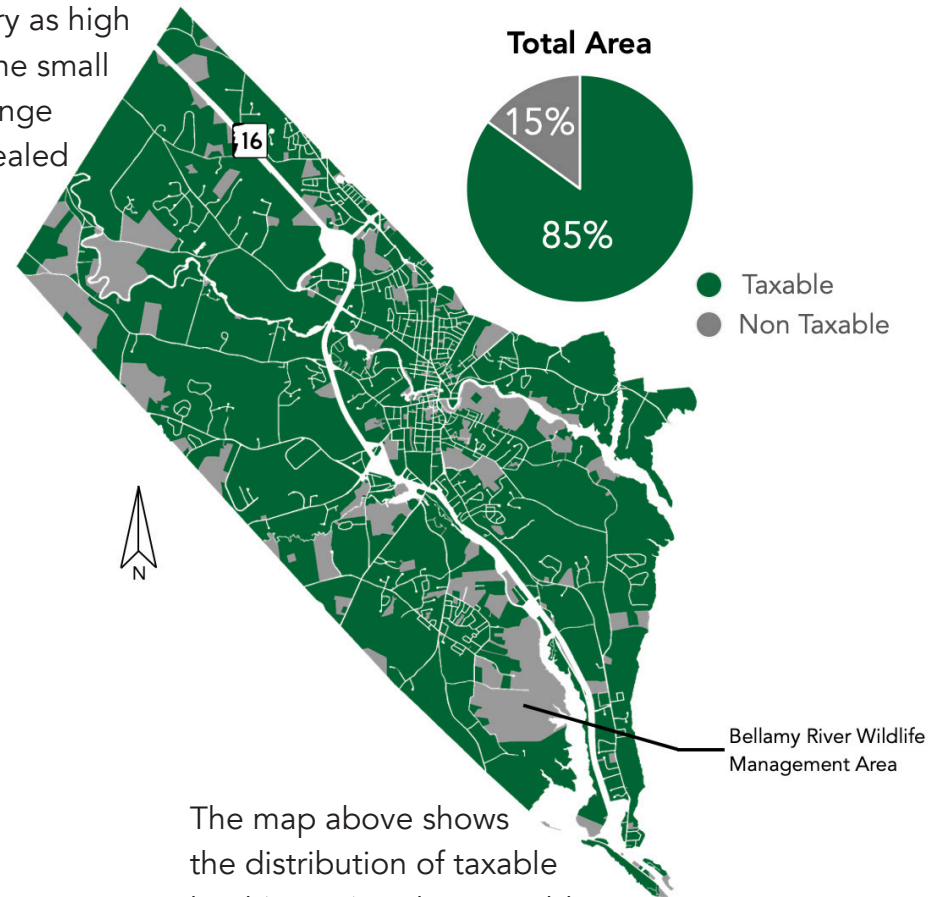
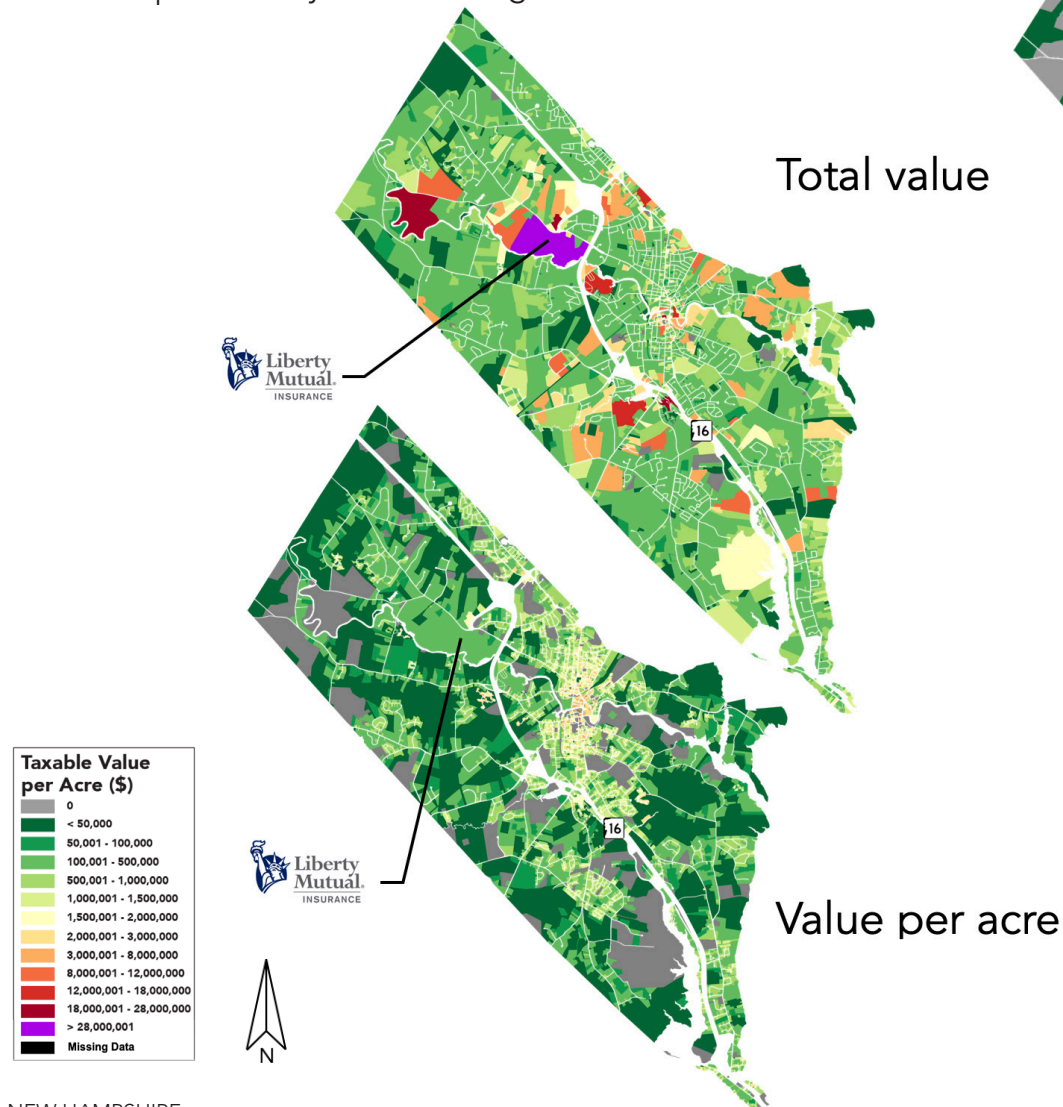


The diagram to the right demonstrates the productivity of Rochester as a metaphorical thermometer. The cooler the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Rochester, the range of value between the peak VPA and the city's average VPA is relatively small. Adding mixed-use, like the Salinger Block redevelopment, and infill projects to the downtown would increase value.



# DOVER

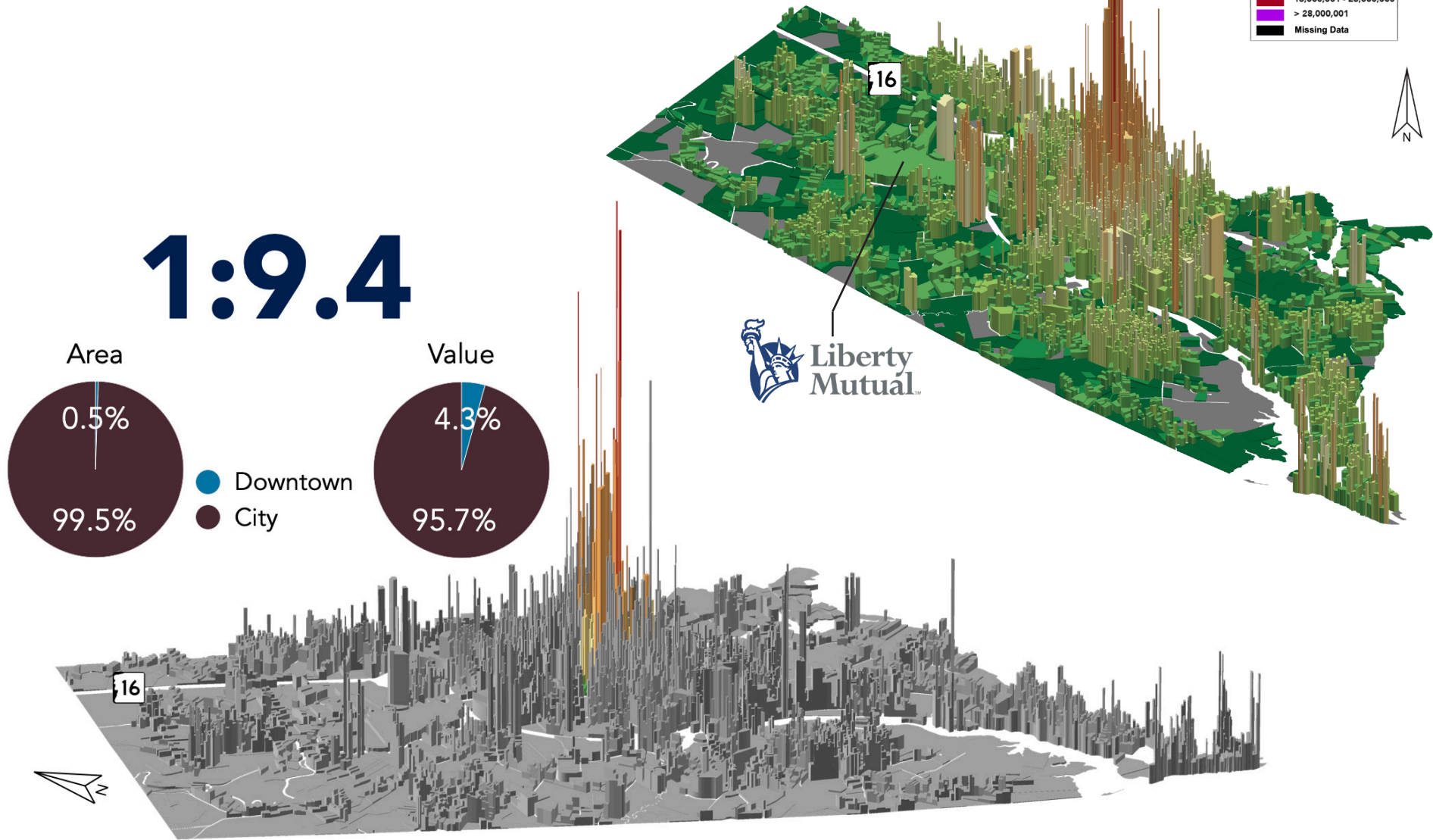
The total value map for Dover shows large properties on the periphery as high value in purple and red. However, when mapped by value per acre, the small highly productive properties along Main Street appear in red and orange and the larger parcels, like the prominent Liberty Mutual site, are revealed to be low productivity and fade to green.



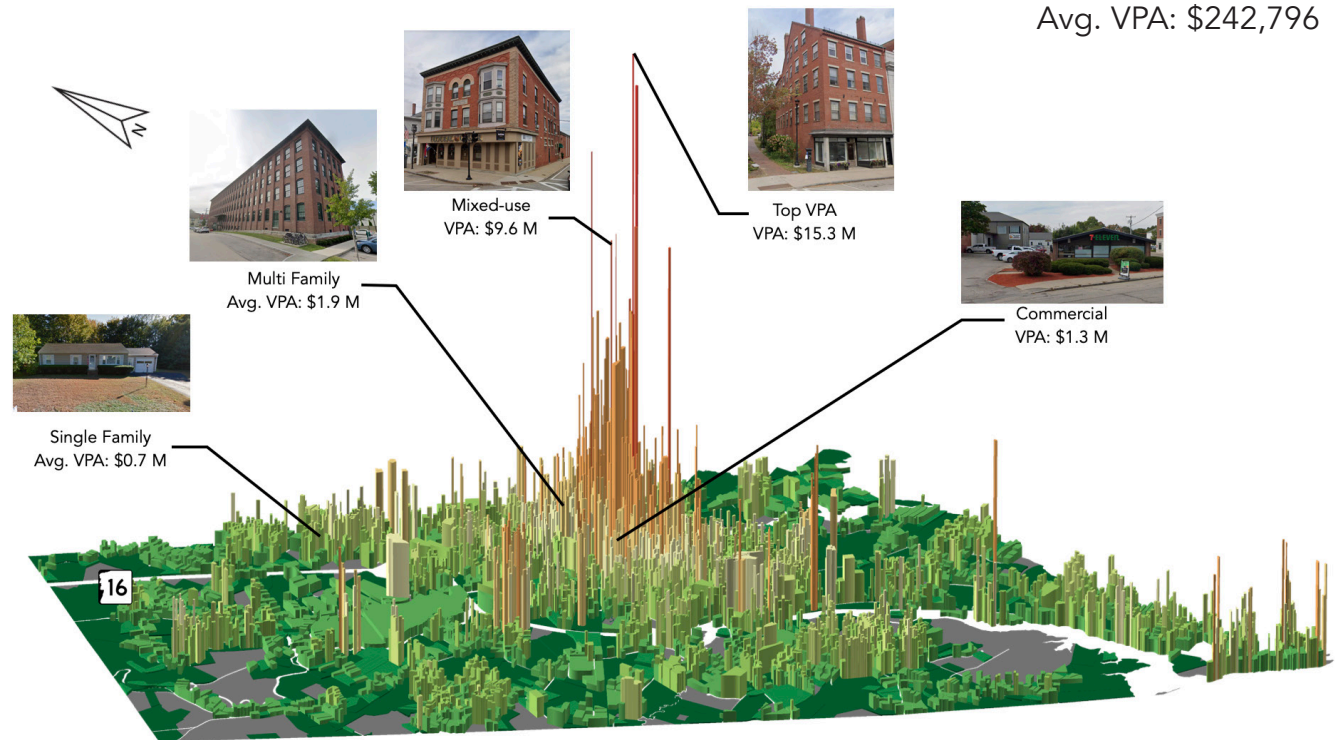
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Dover. The balance of taxable and nontaxable land is important when considering the proportion of revenue-producing land to the tax-exempt land that uses city services without generating revenue. 85% of the land within Dover is taxable and 15% is nontaxable.



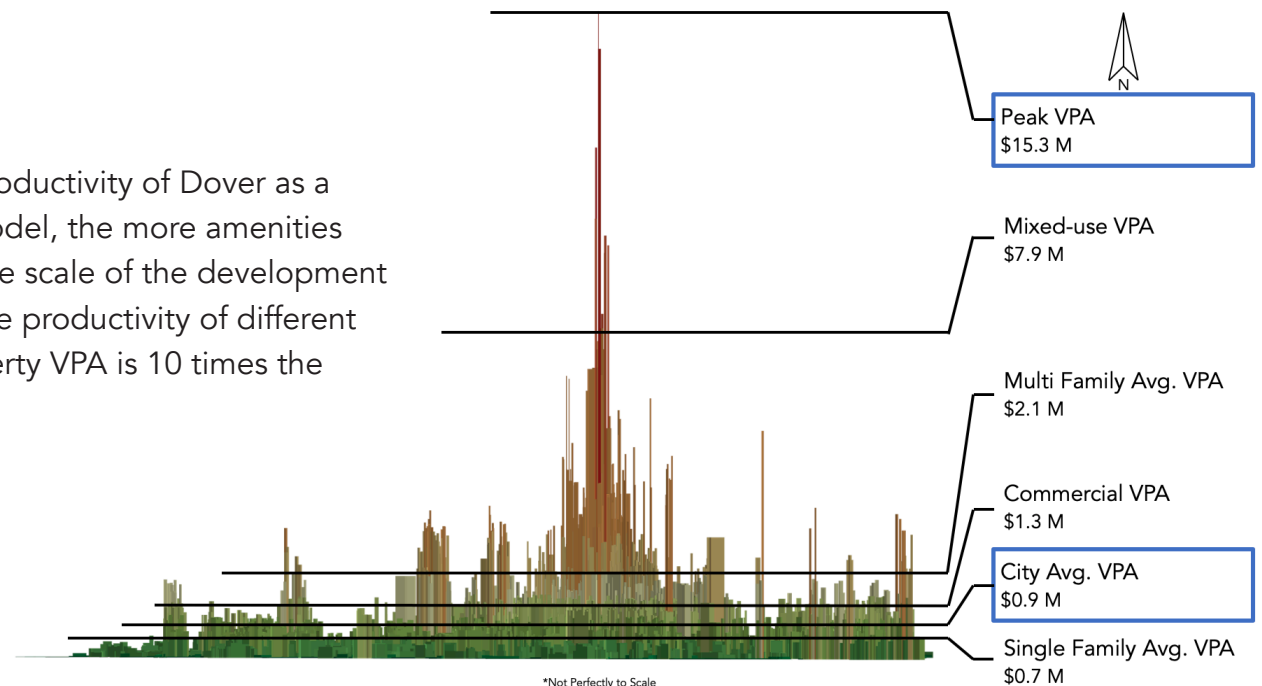
The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Dover uses 0.5% of Dover's land to generate 4.3% of Dover's value. This 1:9.4 ratio means that, relative to its size, downtown Dover is 9.4 times more productive than all of Dover. This ratio is above the typical 1:6 ratio for healthy downtowns. The prevalence of orange spikes in the 3D model indicates that while Dover has some sprawl, the productivity of downtown is generating an abundance of value. Dover could add more mixed-use development and continue to retrofit old mill buildings to further boost its productivity.



The map to the right highlights examples of typical buildings and developments in Dover that help us understand how patterns of land use choices affect value per acre. As buildings grow more valuable and use their land more intensely, they appear taller in the model. The VPA of the single-family example is less than 5% of the peak VPA. Single-family housing parcels often have large yards with inexpensive construction. Together, these factors diminish productivity.

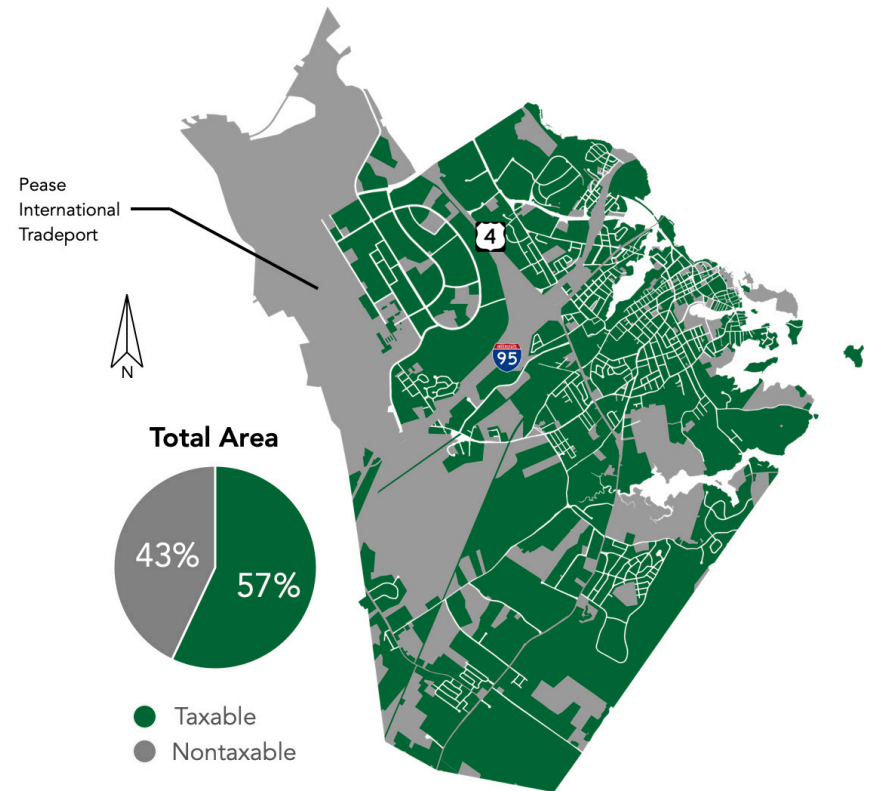
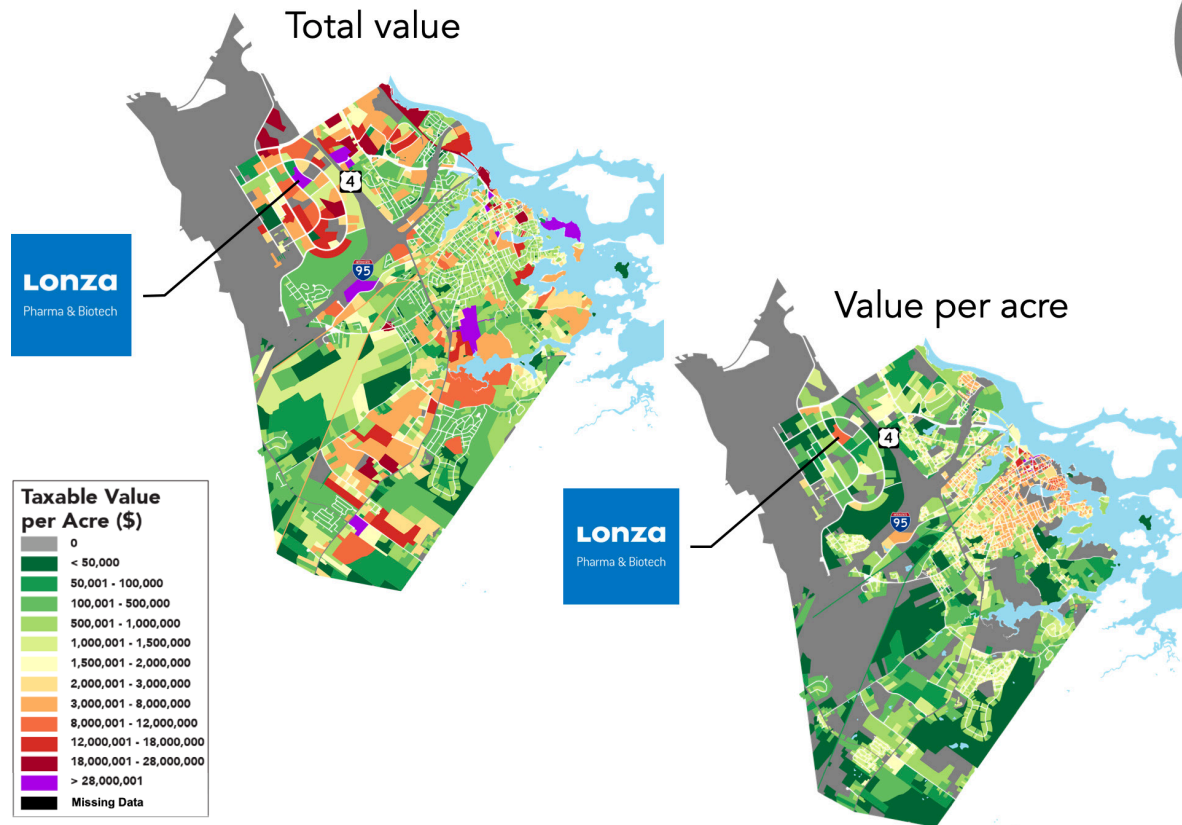


The diagram to the right demonstrates the productivity of Dover as a metaphorical thermometer. The hotter the model, the more amenities and development a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Dover, a typical mixed-use property VPA is 10 times the average single-family VPA.



# PORTSMOUTH

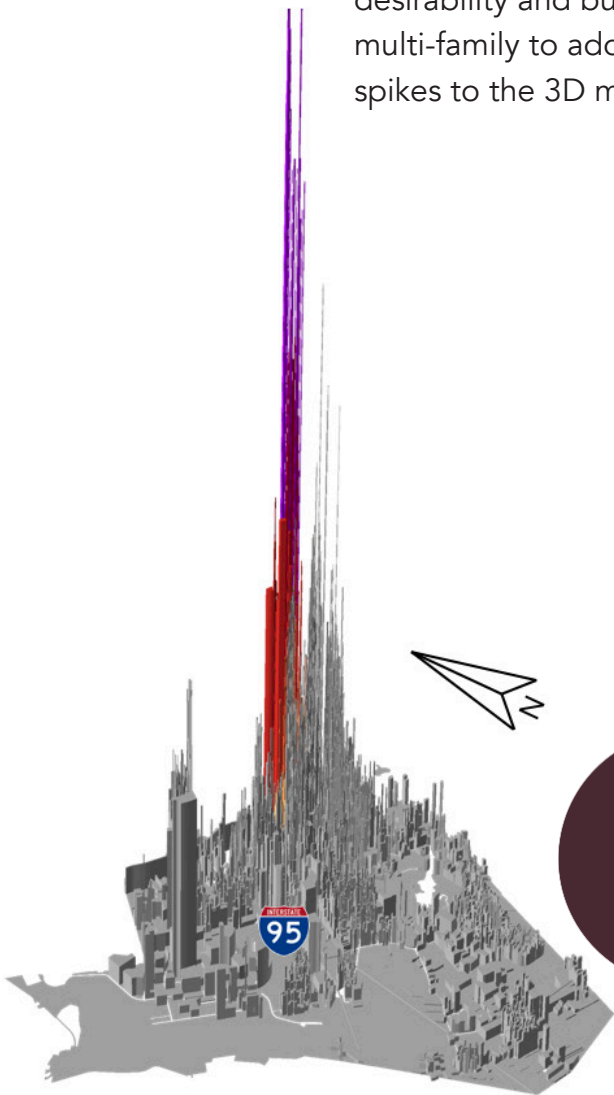
The total value map for Portsmouth shows a collection of larger industrial properties just east of the Pease International Tradeport in high-value red and purple. However, when mapped by value per acre, these medium-sized parcels faded to green, except for the Lonza Biologics property. Unlike nearby neighbors, the Lonza property has a large building with minimal parking. The productivity of downtown Portsmouth is also evident in the value per acre map.



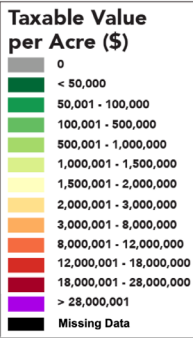
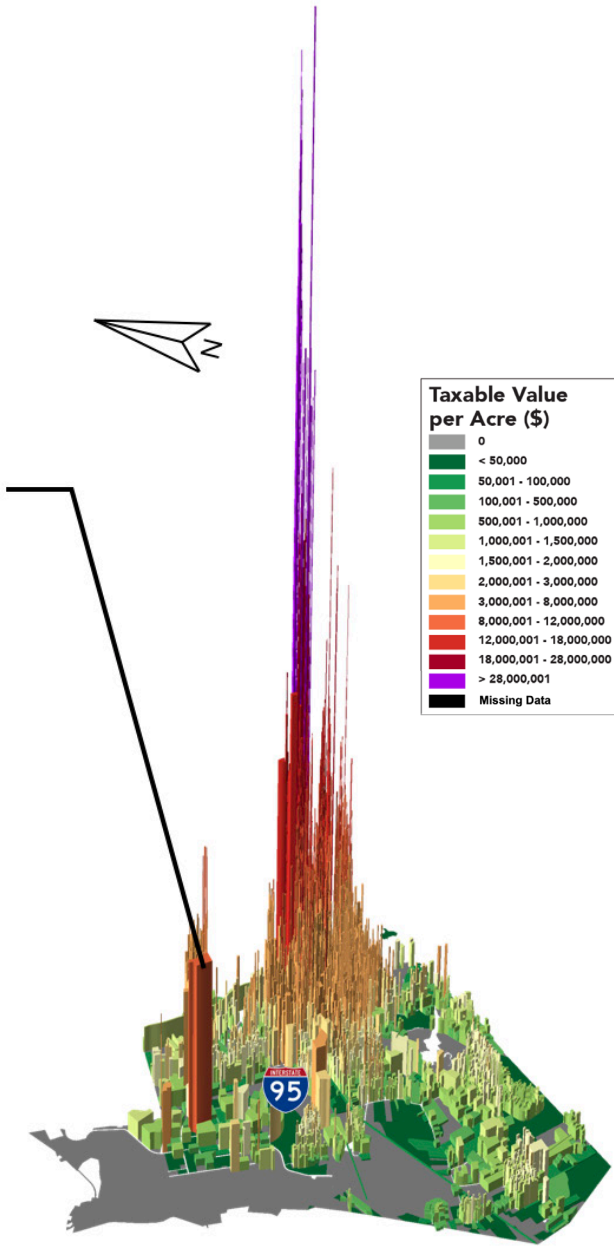
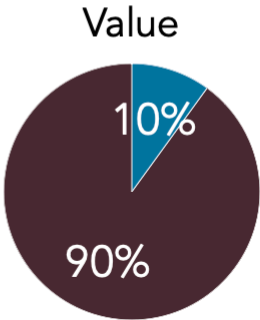
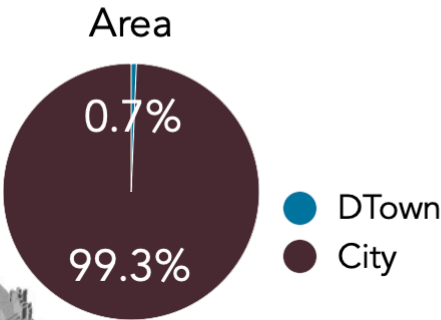
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Portsmouth. 57% of the land within Portsmouth is taxable and 43% is nontaxable. The tradeport makes up a considerable portion of the nontaxable land. However, it doesn't overwhelm the city and significantly limit potential development, especially when we consider that the best opportunity for increasing productivity lies within and around downtown Portsmouth.



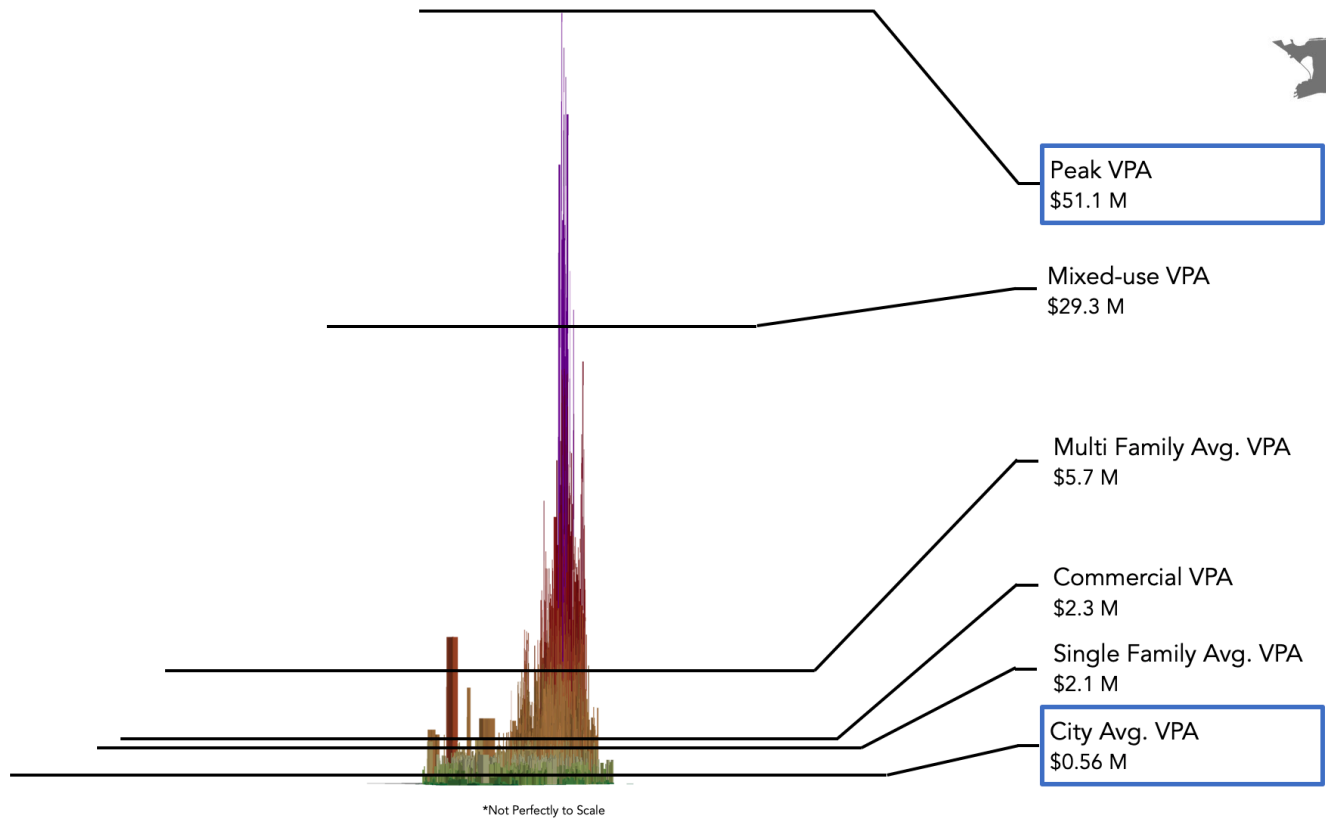
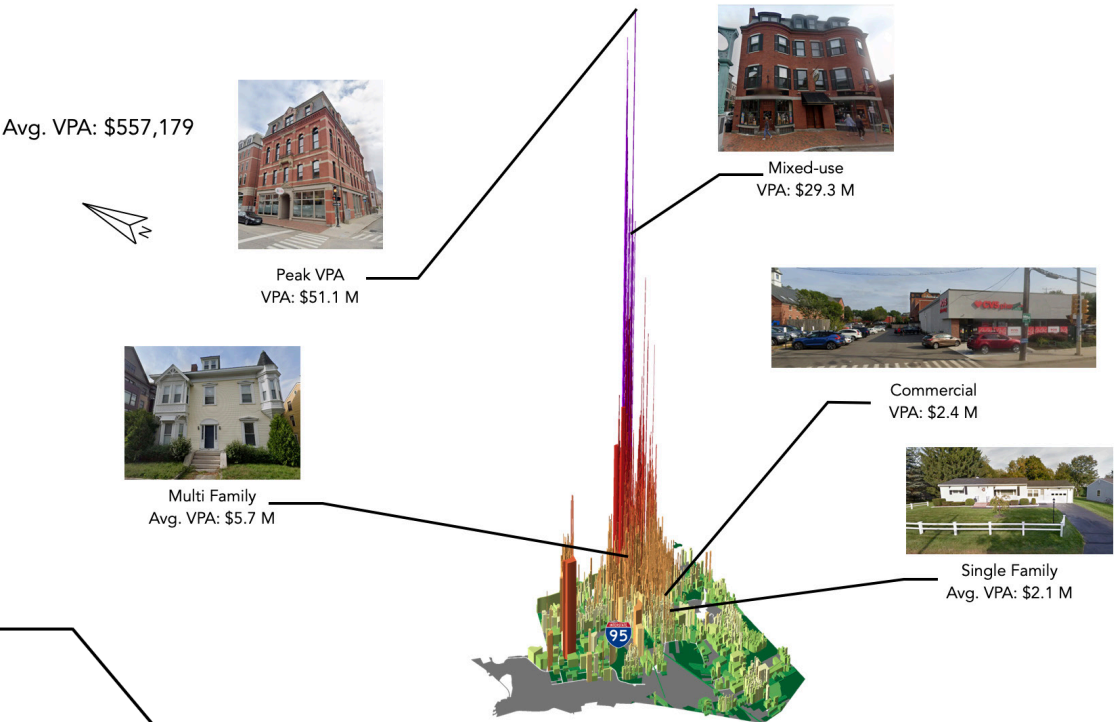
The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Portsmouth uses 0.7% of Portsmouth's land to generate 10% of Portsmouth's value. This 1:15.6 ratio means that, relative to its size, downtown Portsmouth is 15 times as productive as all of Portsmouth. This ratio is more than double the typical 1:6 ratio of a healthy downtown. Portsmouth could capitalize on its clear desirability and build more mixed-use and multi-family to add more red and purple spikes to the 3D model.



1:15.6



The map to the right highlights examples of typical buildings and developments in Portsmouth that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The peak VPA is impressive at \$51.1 M, but even more impressive is the large assortment of mixed-use purple spikes around \$29 M that surround the peak.

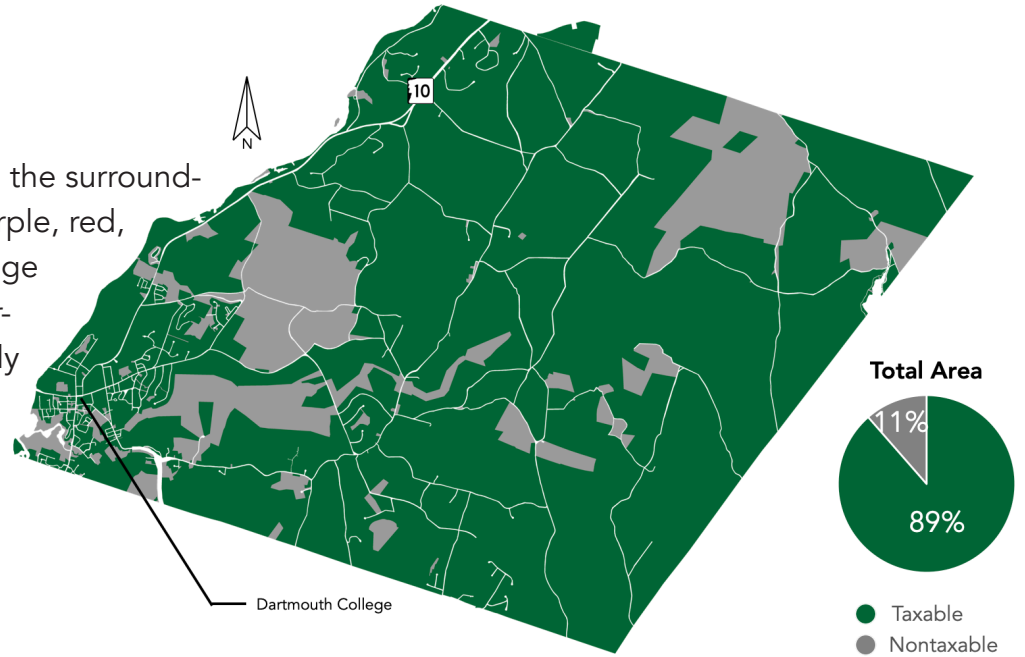
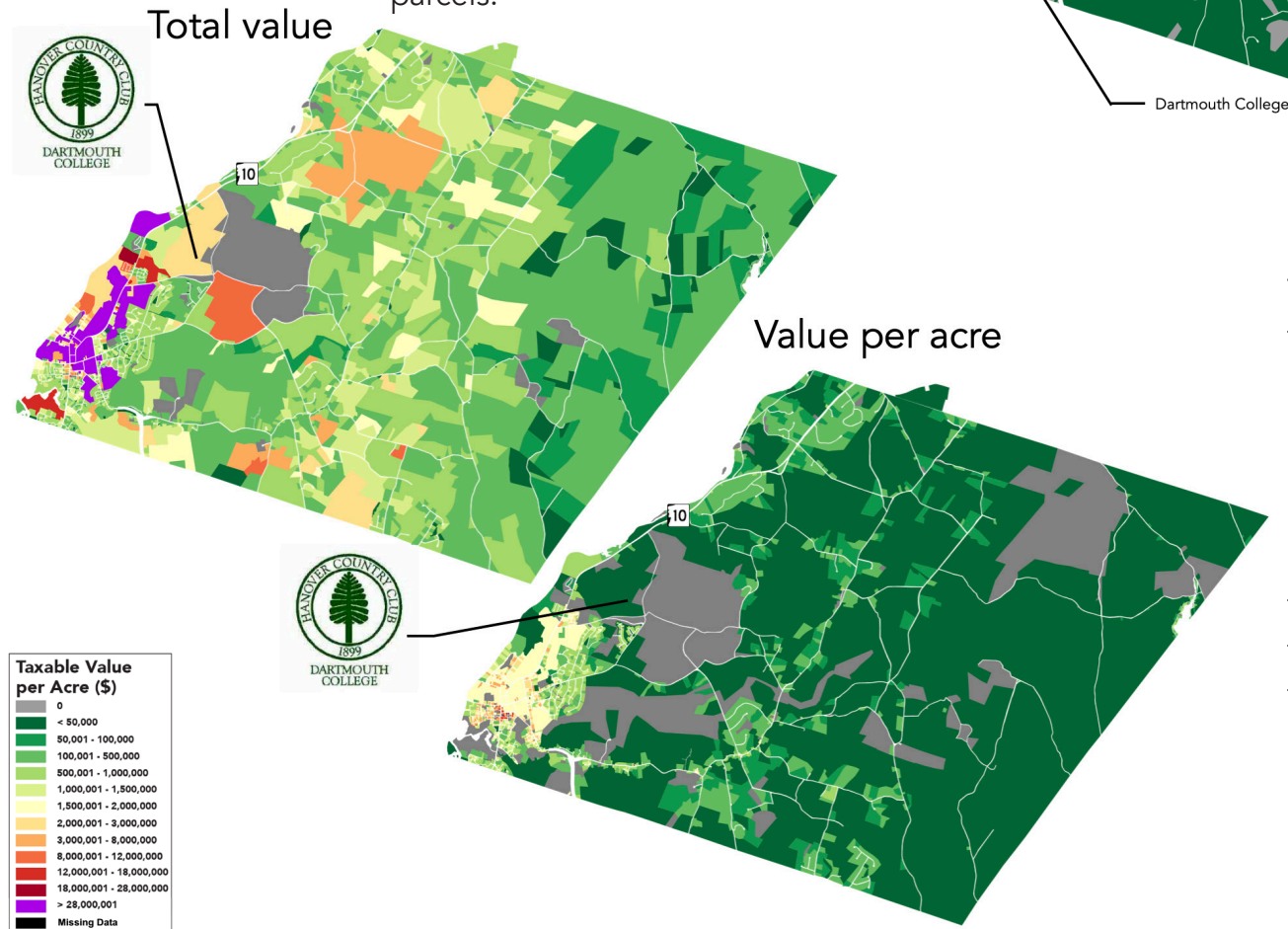


The diagram to the left demonstrates the productivity of Portsmouth as a metaphorical thermometer. The cooler the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Portsmouth, the thermometer is hotter than all other selected communities. The city's strong urban form and proximity to the ocean contribute to its remarkable height and warmth.

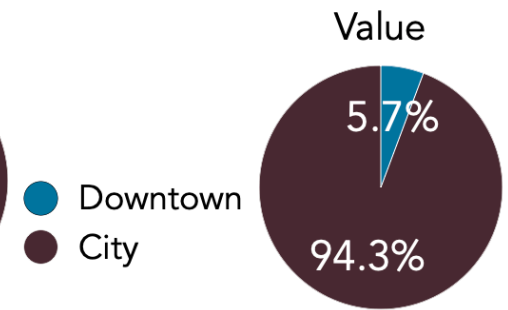
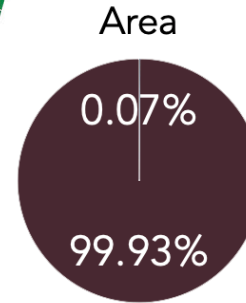
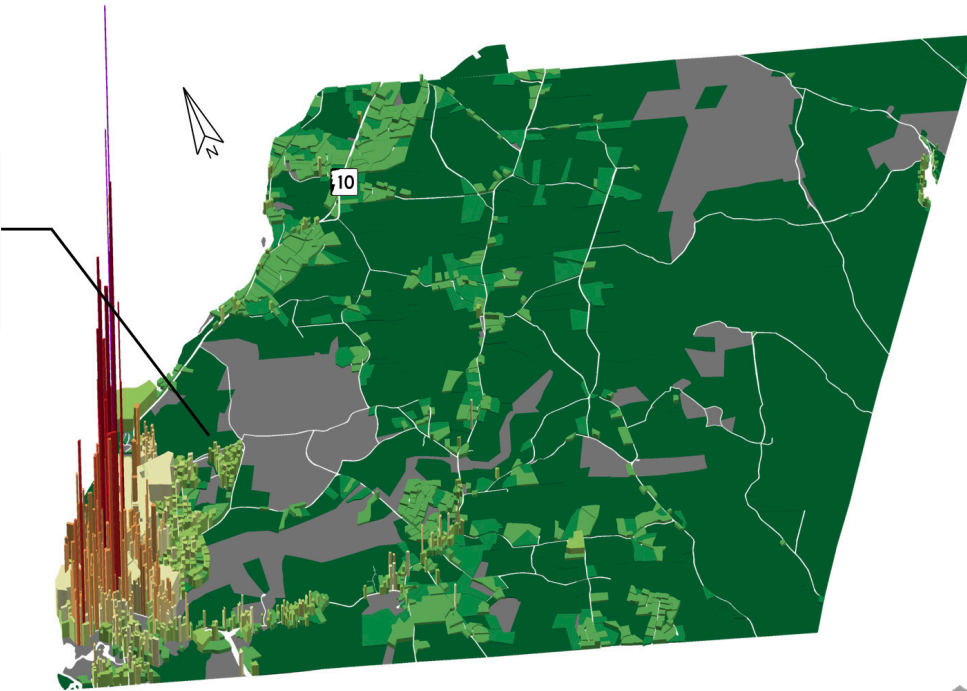


# HANOVER

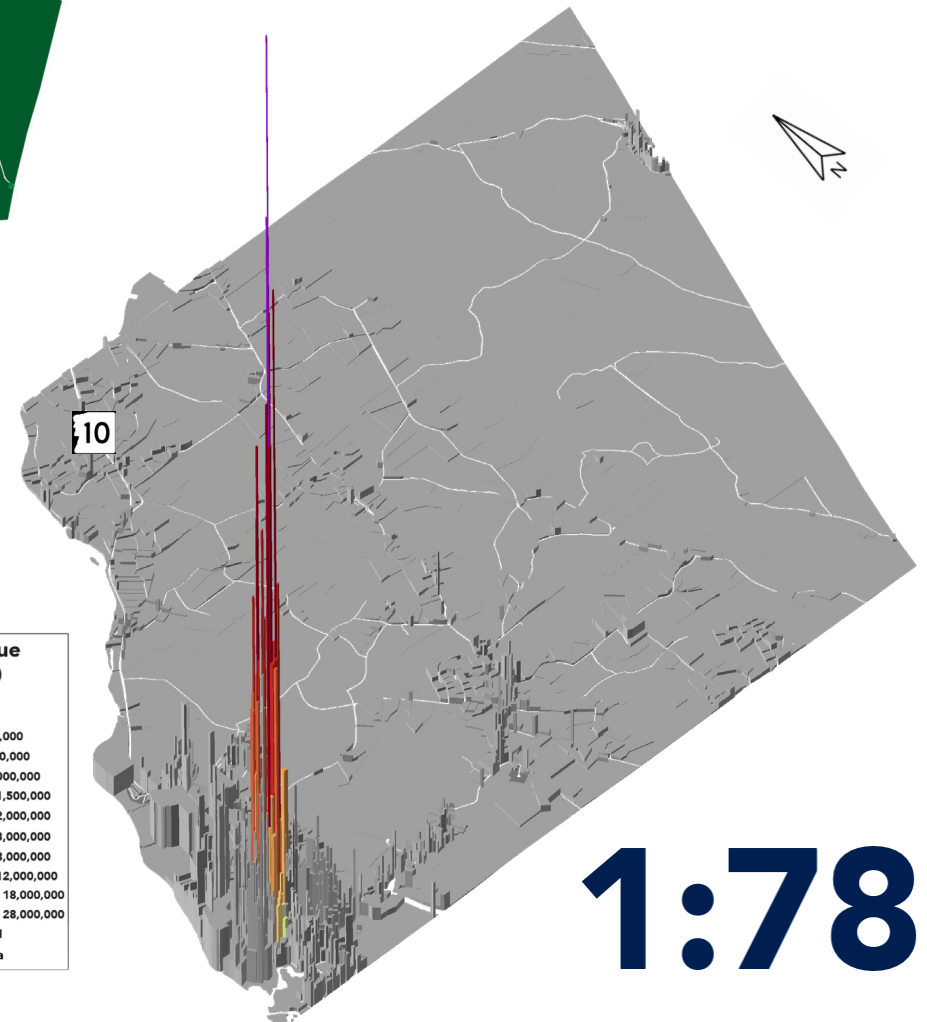
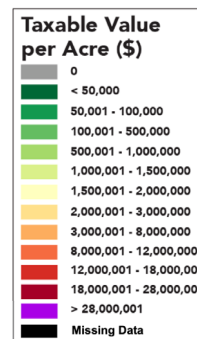
The total value map for Hanover shows Dartmouth College and the surrounding areas, as well as undeveloped rural land as high value in purple, red, and orange. When mapped by value per acre, Dartmouth College falls back to mid-range productivity in yellow, and wide-open areas, like the Hanover Country Club, turn green. The small, highly productive properties along Main Street in downtown Hanover become a concentration of red and orange high productivity parcels.



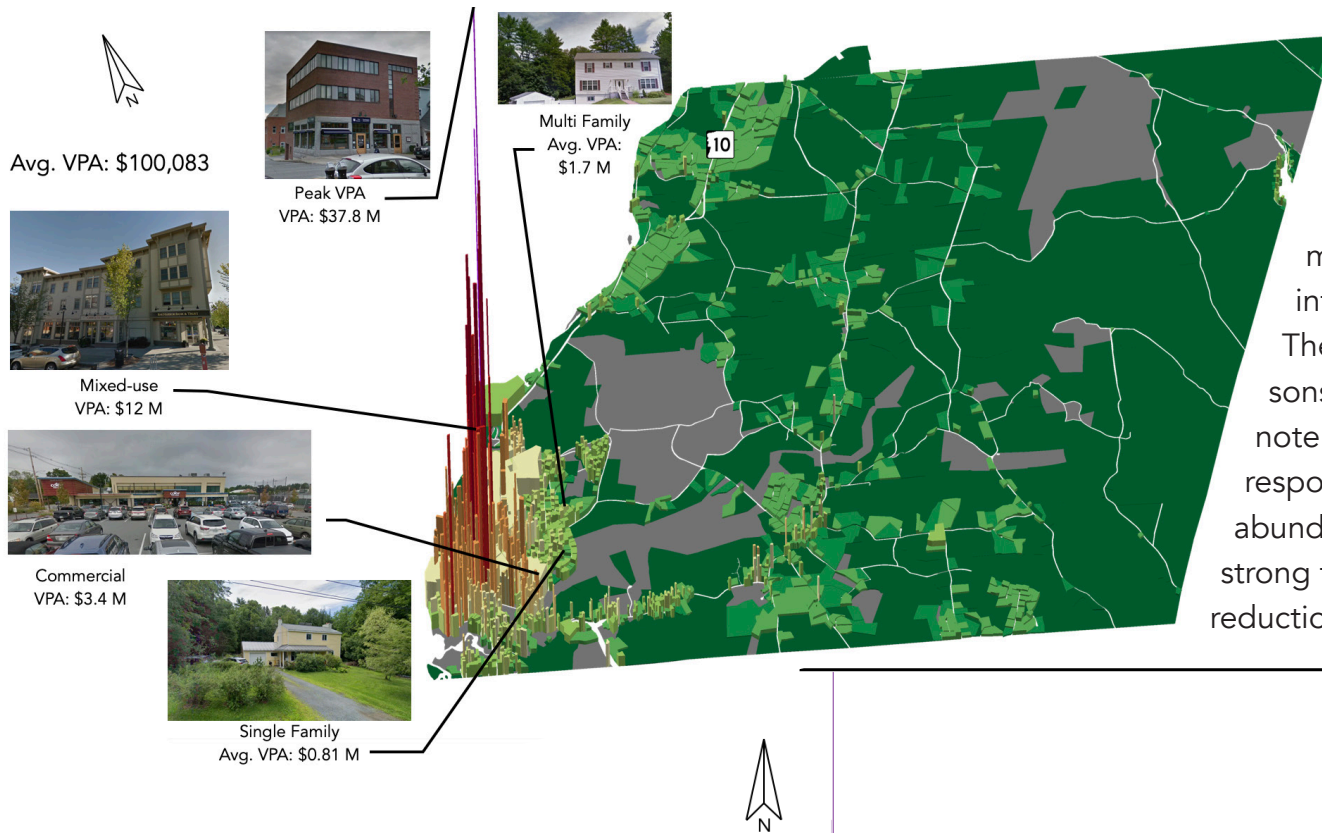
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Hanover. 89% of the land within Hanover is taxable and 11% is nontaxable. Hanover is home to Dartmouth College, a nonprofit institution. While the college isn't necessarily taxable, the type of land use that takes place on parts of its campus are taxable operations. Rather than overlook the mix of uses and map the campus as gray and nontaxable, Urban3 decided to include the value that Dartmouth contributes.



The value per acre metric allows us to compare entire neighborhoods within a community. Downtown Hanover uses 0.07% of Hanover's land to generate 5.7% of Hanover's value. This 1:78 ratio means that, relative to its size, downtown Hanover is 78 times more productive than all of Hanover. This incredible ratio transcends the typical 1:6 ratio of a healthy downtown. The cluster of red and purple spikes in the 3D model indicates that downtown Hanover is flourishing and that Hanover overall has avoided costly sprawl development. Hanover could continue to contain parking within parking structures, add more mixed-use to the downtown and refrain from building far-flung single-family neighborhoods.

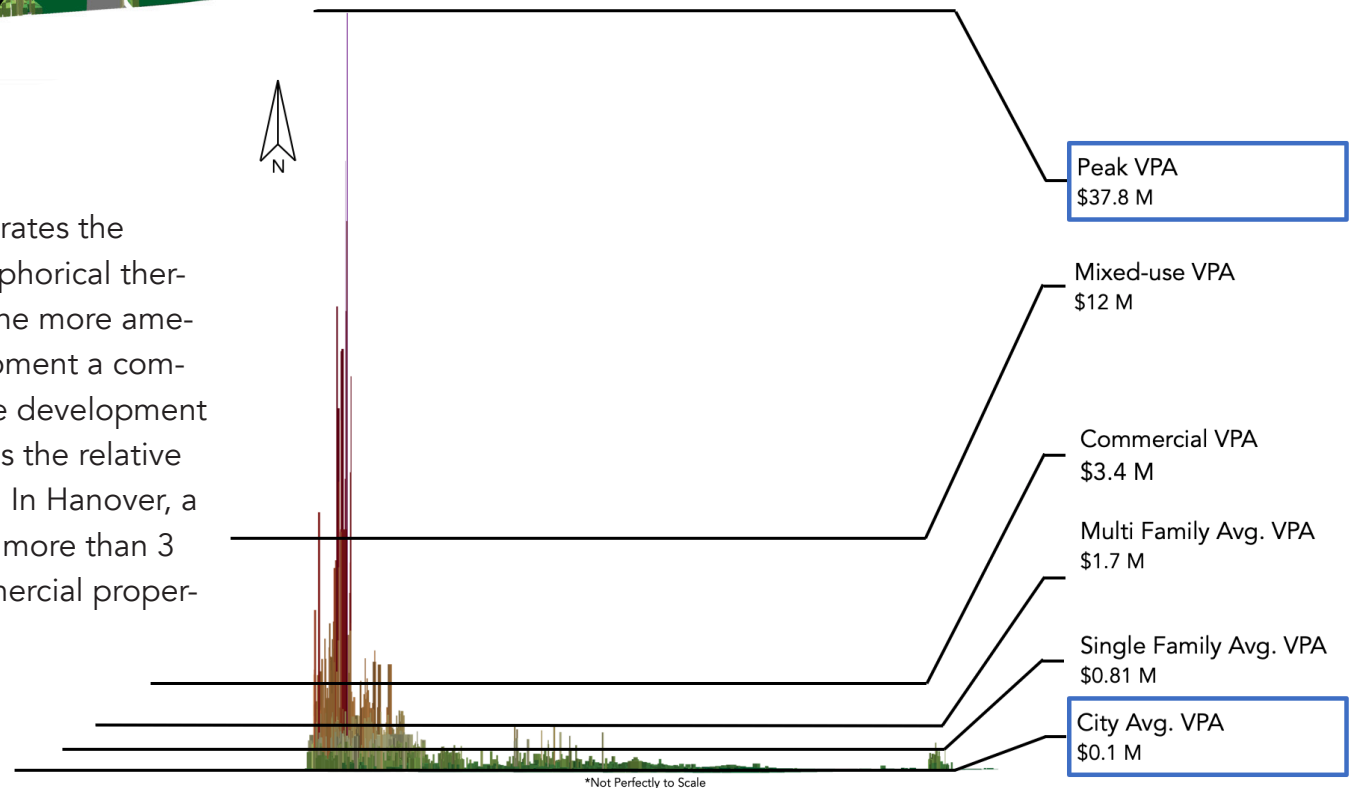


1:78



The map to the left highlights examples of typical buildings and developments in Hanover that help us understand how patterns of land use choices affect value per acre. As buildings grow more valuable and use their land more intensely, they appear taller in the model. The impressive peak VPA is the Four Seasons Sotheby's Realty office. It's important to note that the peak VPA property is not solely responsible for Hanover's high productivity. The abundance of mixed-use properties provide a strong foundation and limited sprawl prevents a reduction in productivity.

The diagram to the right demonstrates the productivity of Hanover as a metaphorical thermometer. The hotter the model, the more amenities and less-productive development a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Hanover, a typical mixed-use property VPA is more than 3 times the typical exclusively commercial property VPA. Adding uses grows value.

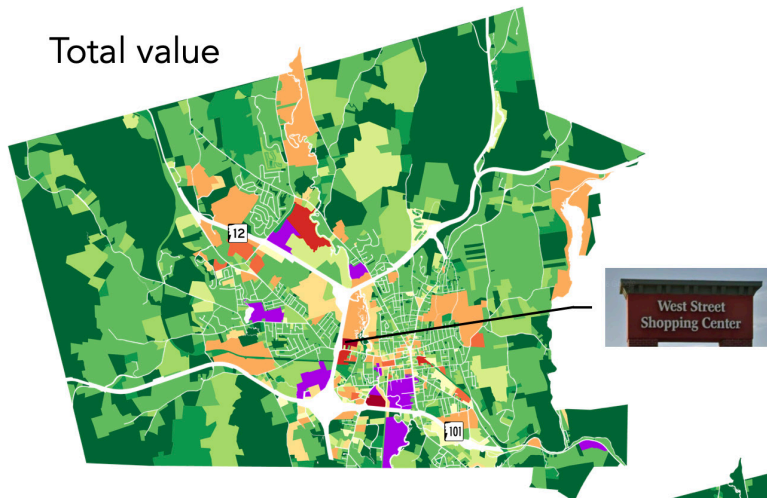




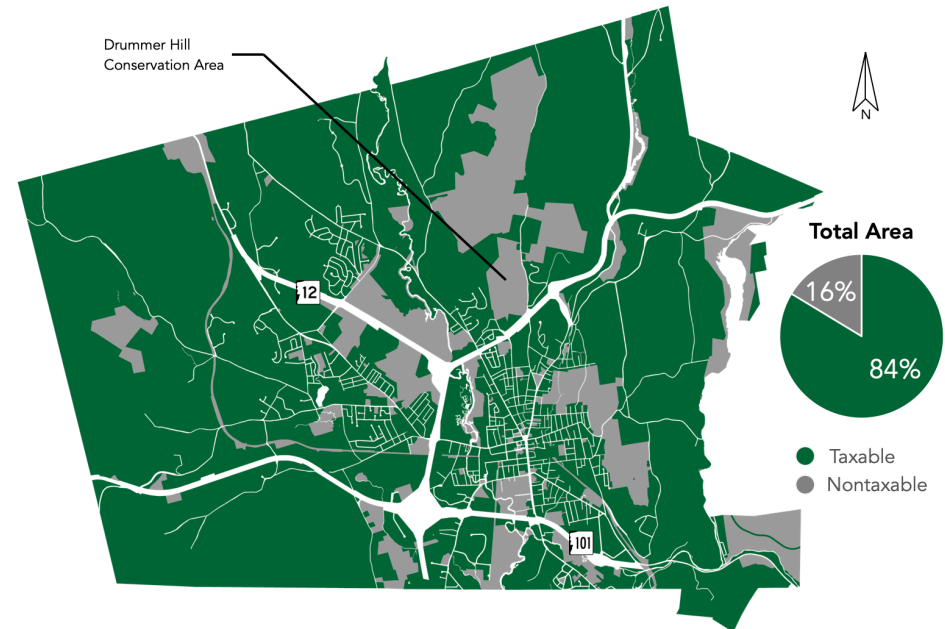
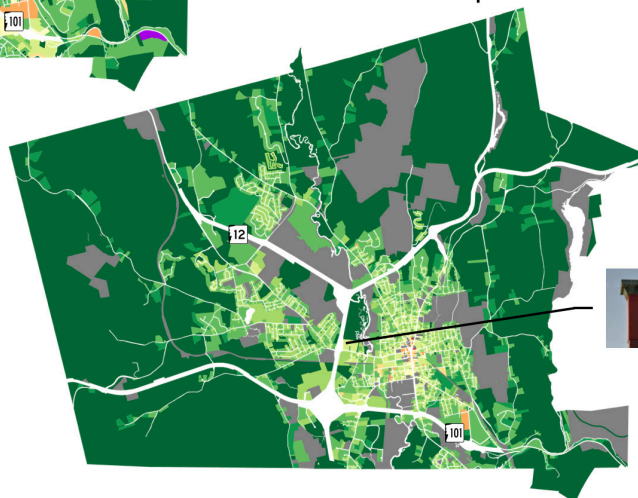
# KEENE

The total value map for Keene shows large commercial properties between NH Rte 12 and 101 east of downtown, including the West Street Shopping Center in high value shades of orange and red. However, when mapped by value per acre, the parcels along this commercial corridor fade to green and downtown Keene appears in red and orange. Vast parking lots and inexpensive building materials contribute to the low productivity of big-box development.

Total value

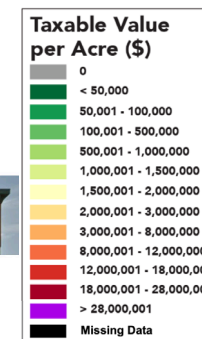


Value per acre



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Keene. 84% of the land within Keene is taxable and 16% is nontaxable. The fact that Keene is home to Keene State College changes what might otherwise be a typical balance of taxable and non-

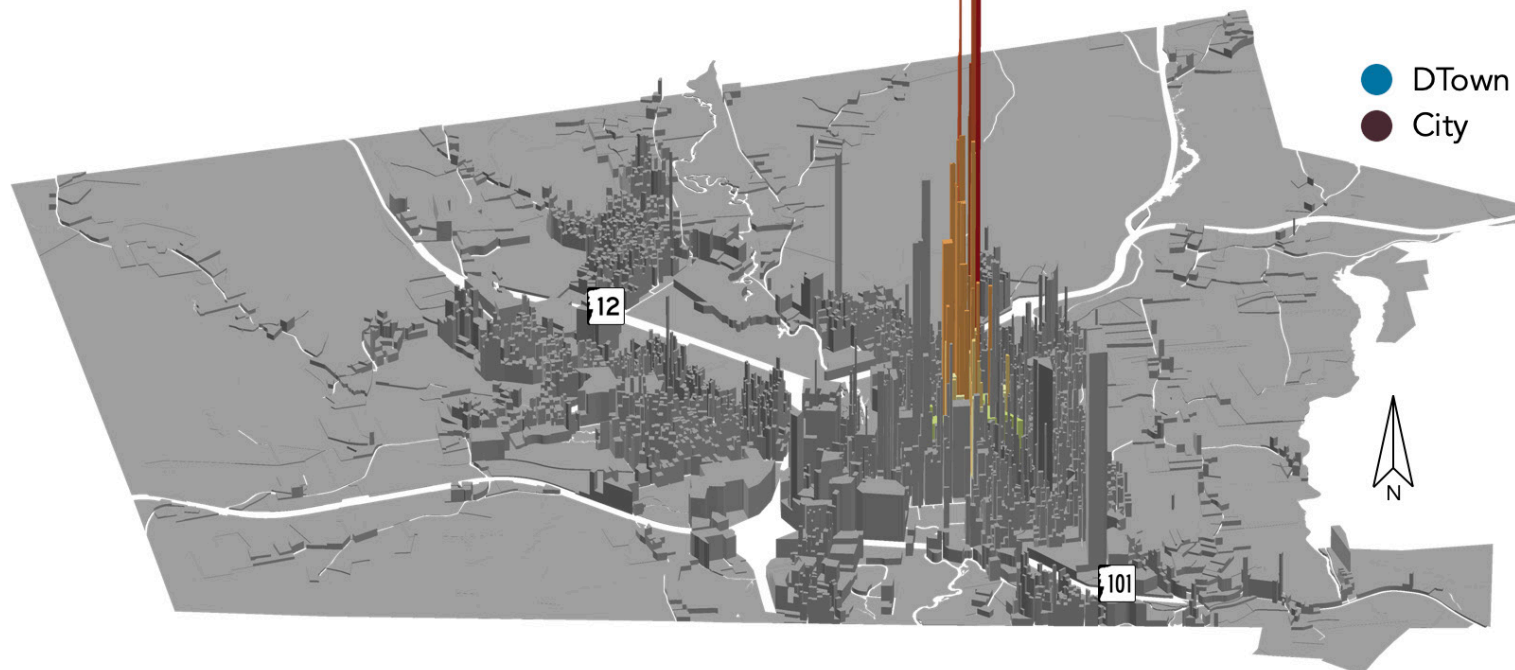
taxable land. However, the best opportunity for increasing productivity lies within downtown Keene. Focusing on projects that capitalize on the proximity of the school and adding mixed-use buildings nearby could compensate for the nontaxable campus.





The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Keene uses 0.3% of Keene's land to generate 5.2% of Keene's value. This 1:20 ratio means that, relative to its size, downtown Keene is 20 times more productive than all of Keene. This ratio is a sign of a healthy downtown, but there is always room to improve. Refurbishing historic mixed-use buildings and transforming large surface parking lots in downtown into new development would create new spikes of value in the 3D model.

# 1:20



Area

0.3%

99.7%

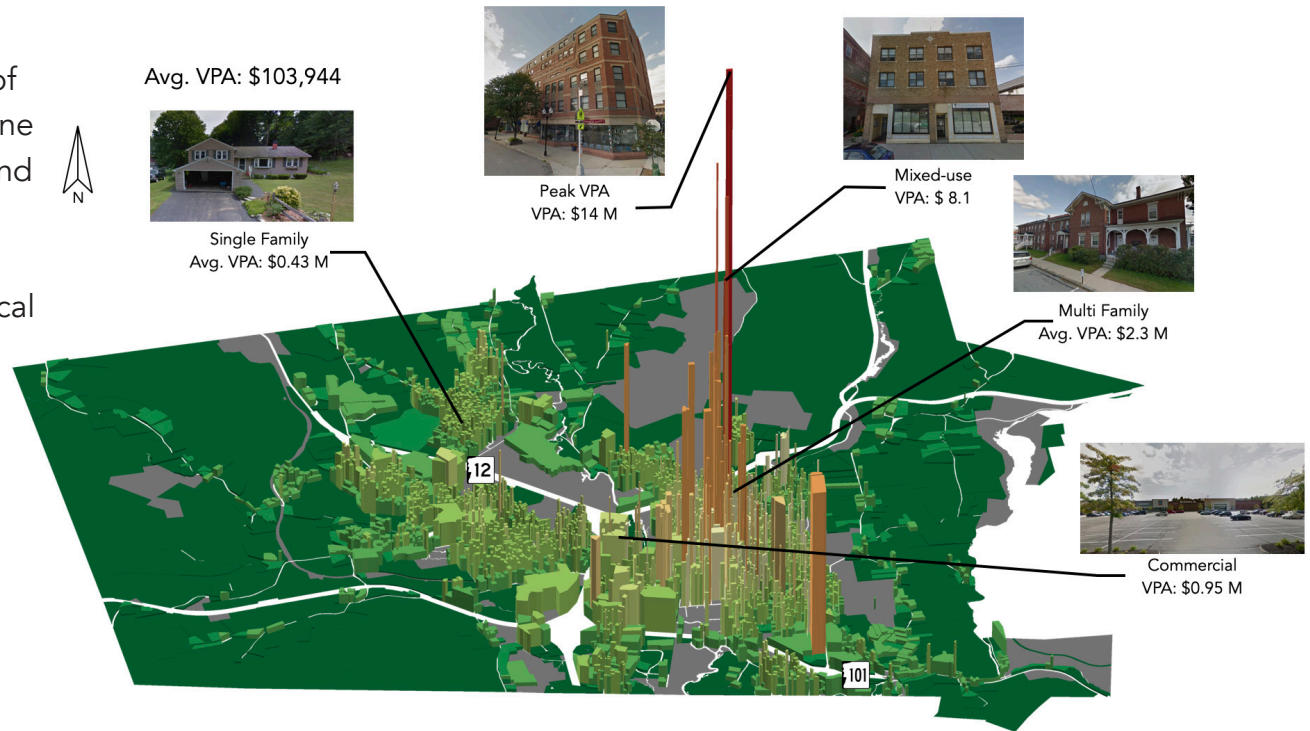
Value

5.2%

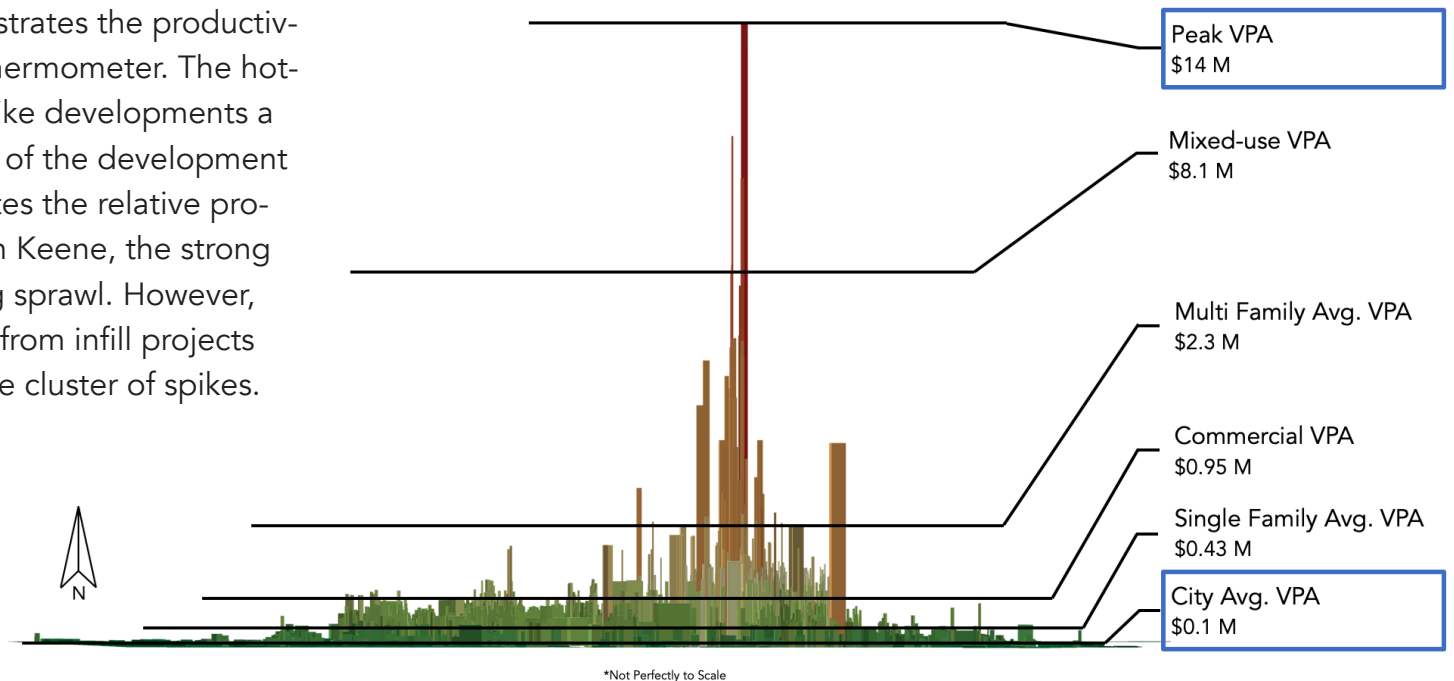
94.9%



The map to the right highlights examples of typical buildings and developments in Keene that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. In Keene, the typical mixed-use VPA is more than 8 times the typical VPA of a solely commercial property. Adding residential use to a commercial venture improves productivity.

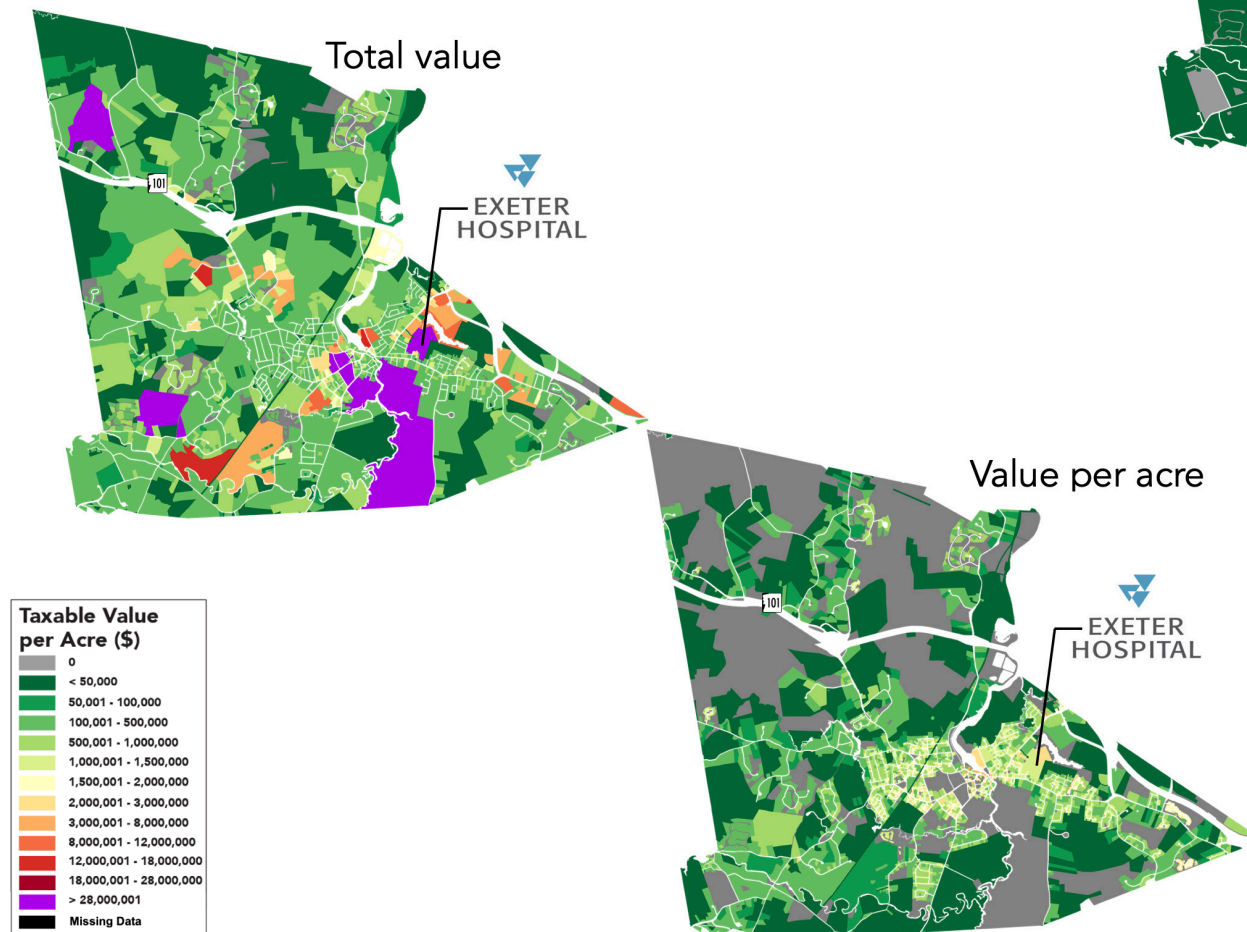
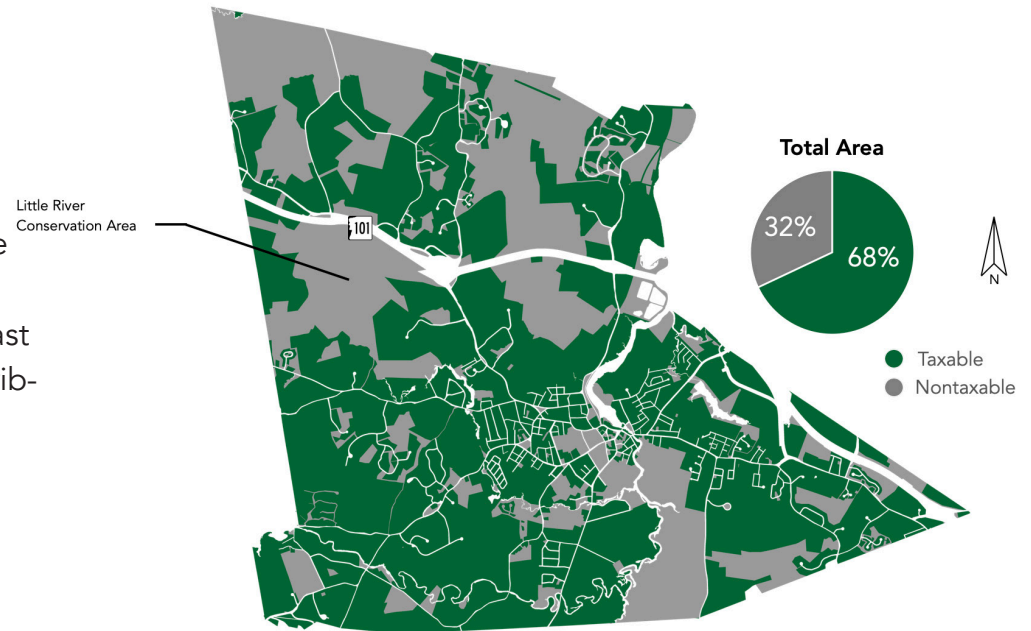


The diagram to the right demonstrates the productivity of Keene as a metaphorical thermometer. The hotter the model, the more sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Keene, the strong downtown surpasses the existing sprawl. However, downtown Keene would benefit from infill projects that would thicken the urban core cluster of spikes.



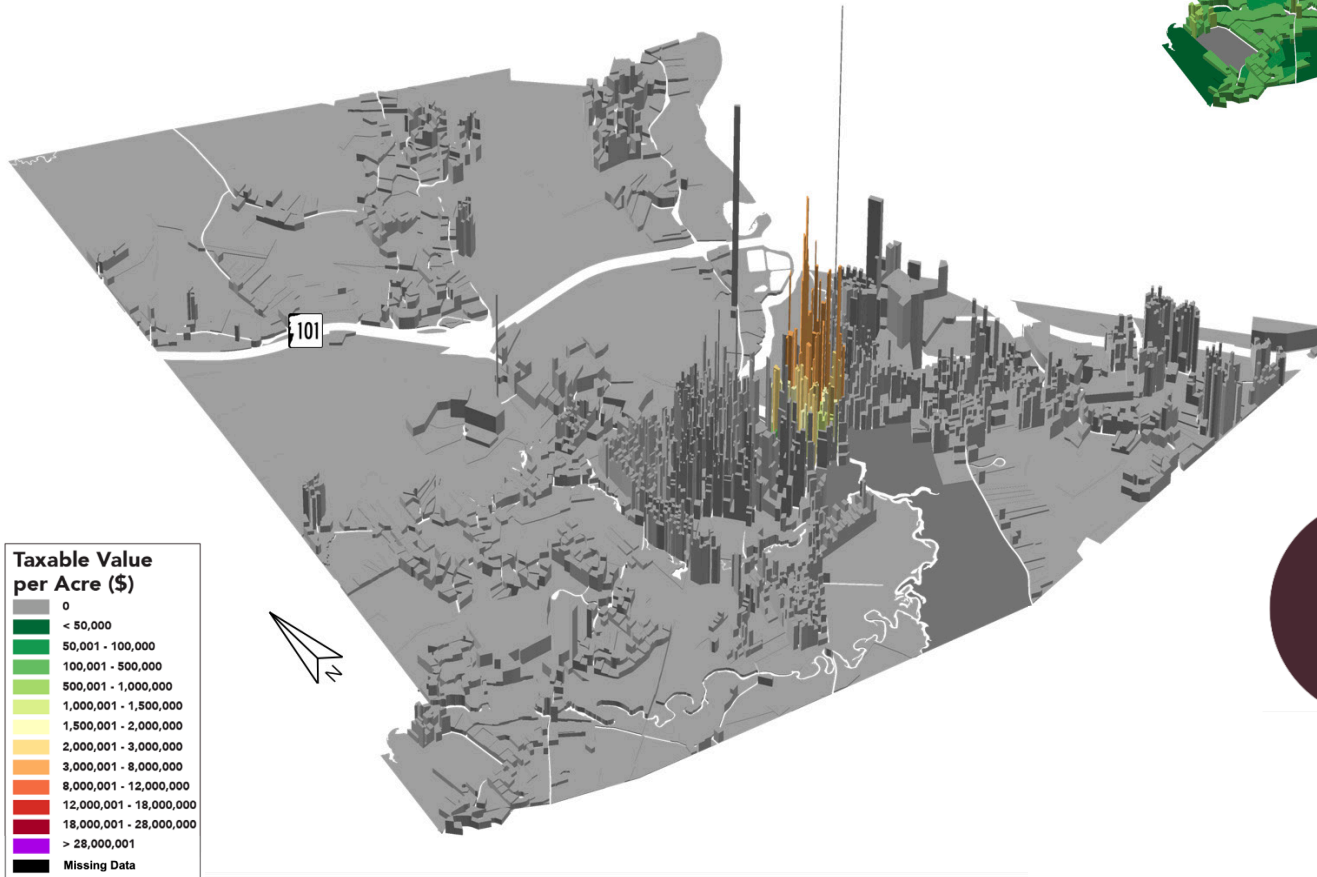
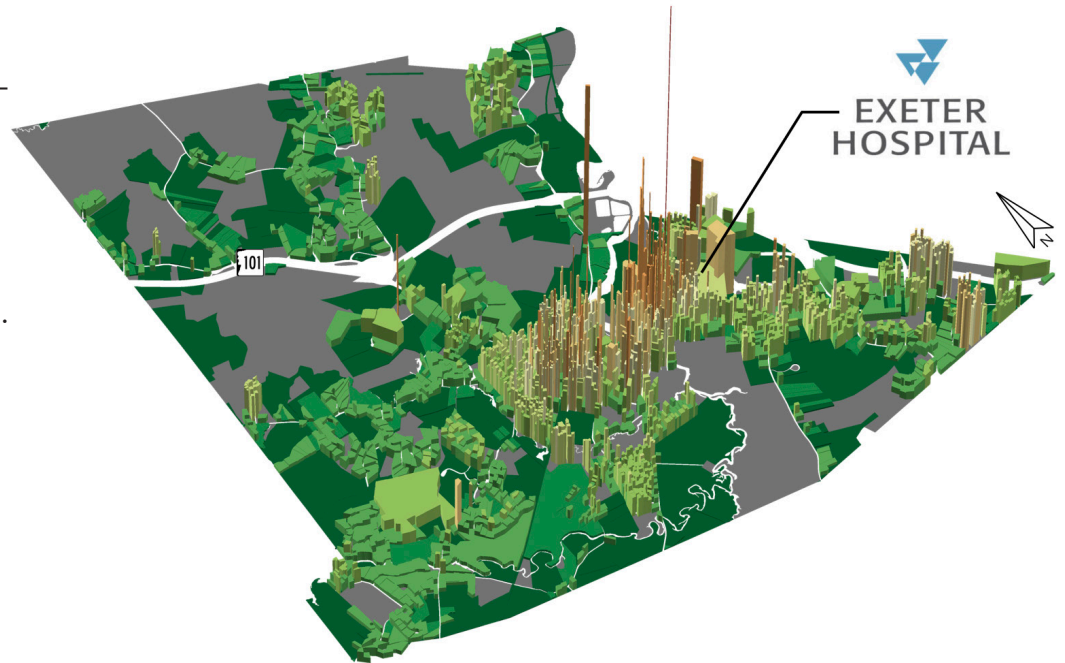
# EXETER

The total value map for Exeter shows large commercial properties east of downtown around Exeter hospital in high value shades of orange and purple. However, when mapped by value per acre, the parcels along this commercial corridor turn green and Exeter Hospital fades to mid-range productivity orange. Vast parking lots around auto-oriented stores and the hospital contribute to the low productivity.



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Exeter. 68% of the land within Exeter is taxable and 32% is nontaxable. The fact that Exeter is home to Phillips Exeter Academy changes what might otherwise be a typical balance of taxable and nontaxable land. The best opportunity for increasing productivity lies within downtown Exeter. Focusing on projects that capitalize on the proximity of the school and adding mixed-use buildings nearby could compensate for the nontaxable campus.

The value per acre metric allows us to compare entire neighborhoods within a community. Downtown Exeter uses 0.3% of Exeter's land to generate 2.8% of Exeter's value. This 1:9 ratio means that, relative to its size, downtown Exeter is 9 times more productive than all of Exeter. This ratio is a sign of a healthy downtown, but there is always room to improve. Refurbishing historic mixed-use buildings and transforming large surface parking lots in downtown into new development would create new spikes of value in the 3D model.



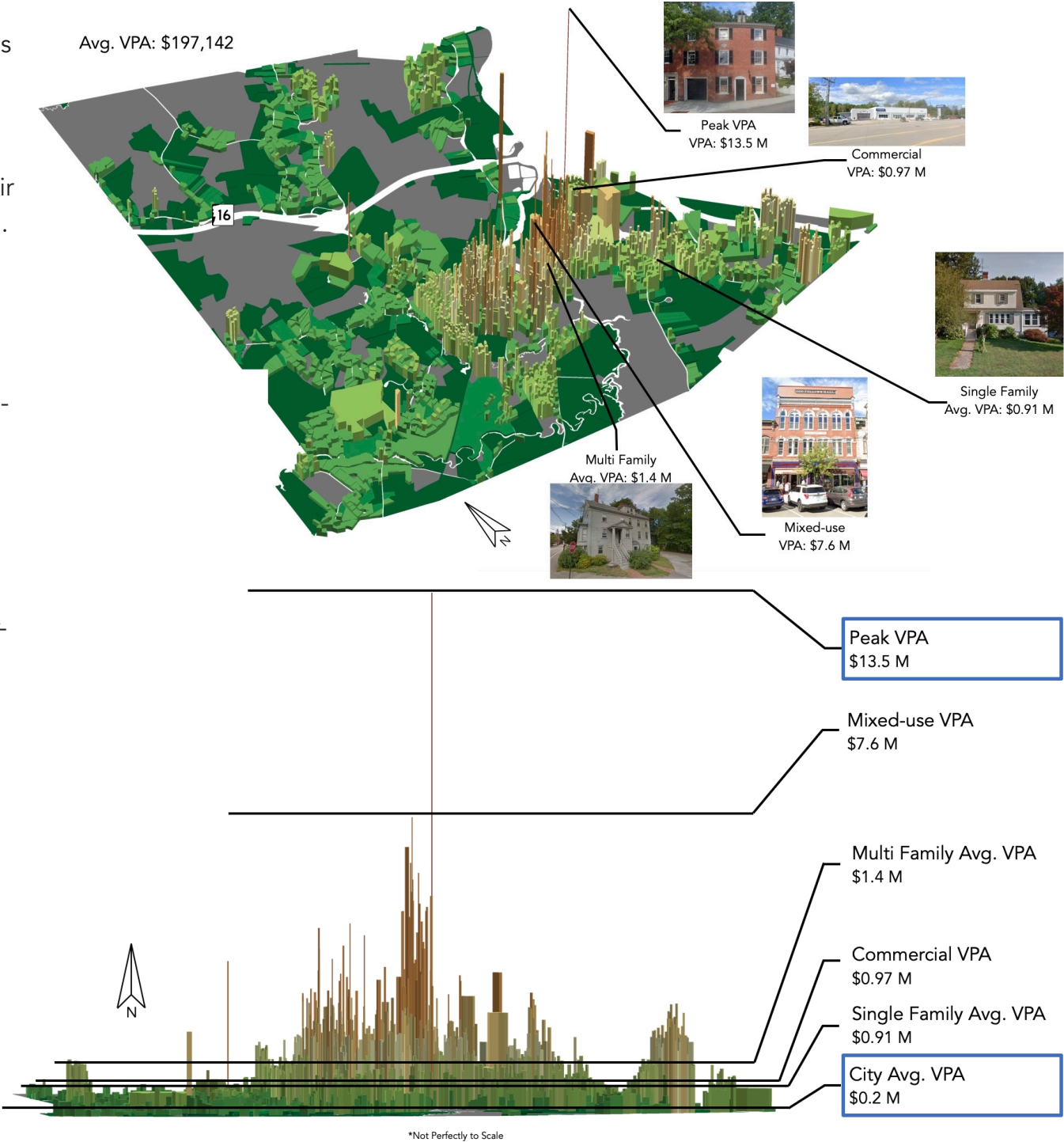
# 1:9.2





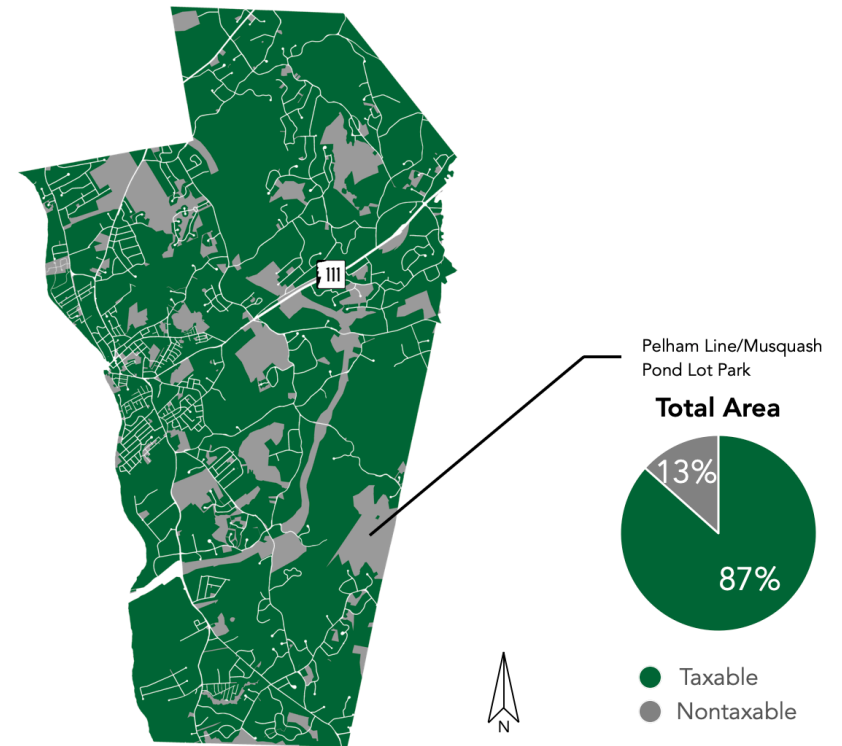
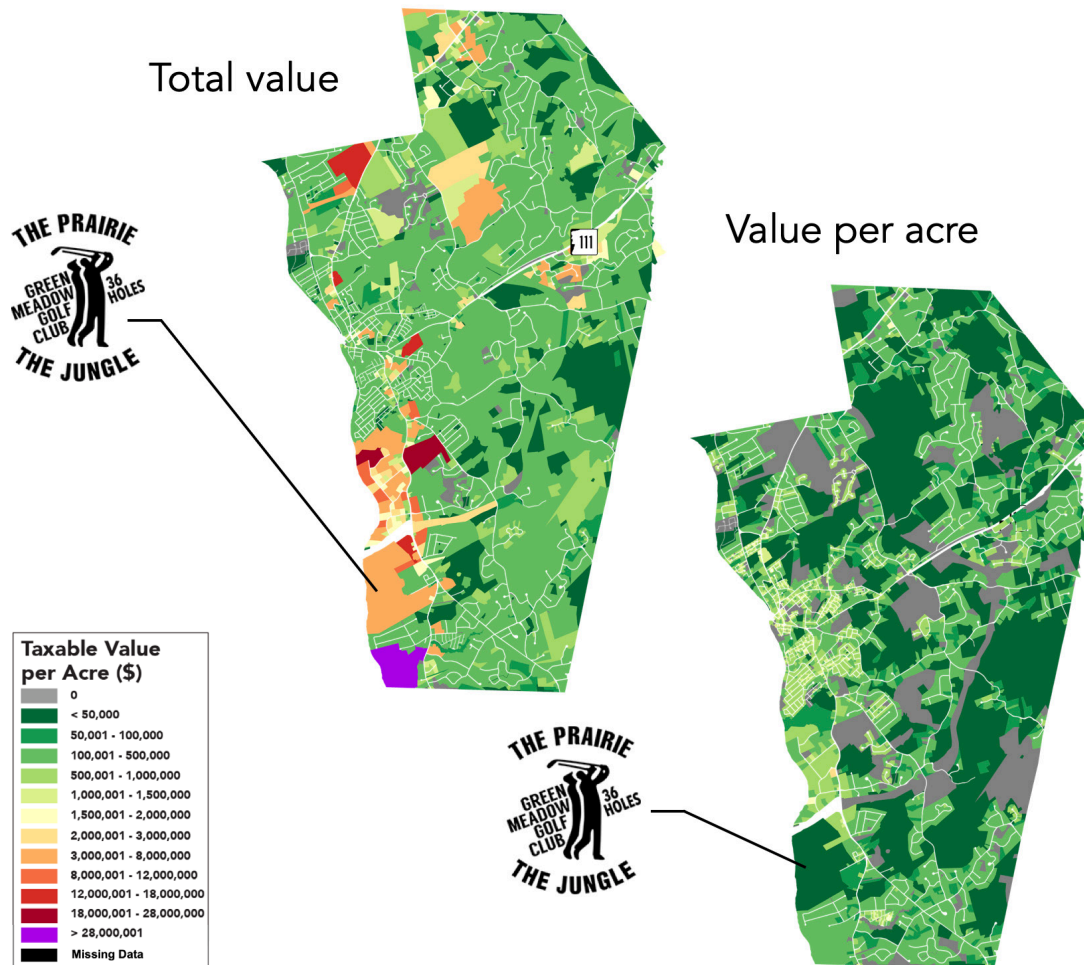
The map to the right highlights examples of typical buildings and developments in Exeter that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. In Exeter, the average multi-family VPA is nearly twice the average single-family VPA. Adding smaller multi-family buildings in and around downtown increases productivity while also addressing affordable housing issues.

The diagram to the right demonstrates the productivity of Exeter as a metaphorical thermometer. The cooler the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Exeter, the abundance of single-family homes and auto-oriented stores create a plateau of lower value around the more productive downtown.



# HUDSON

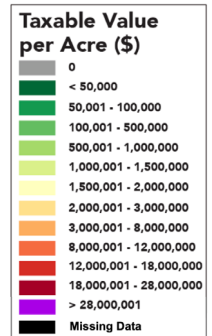
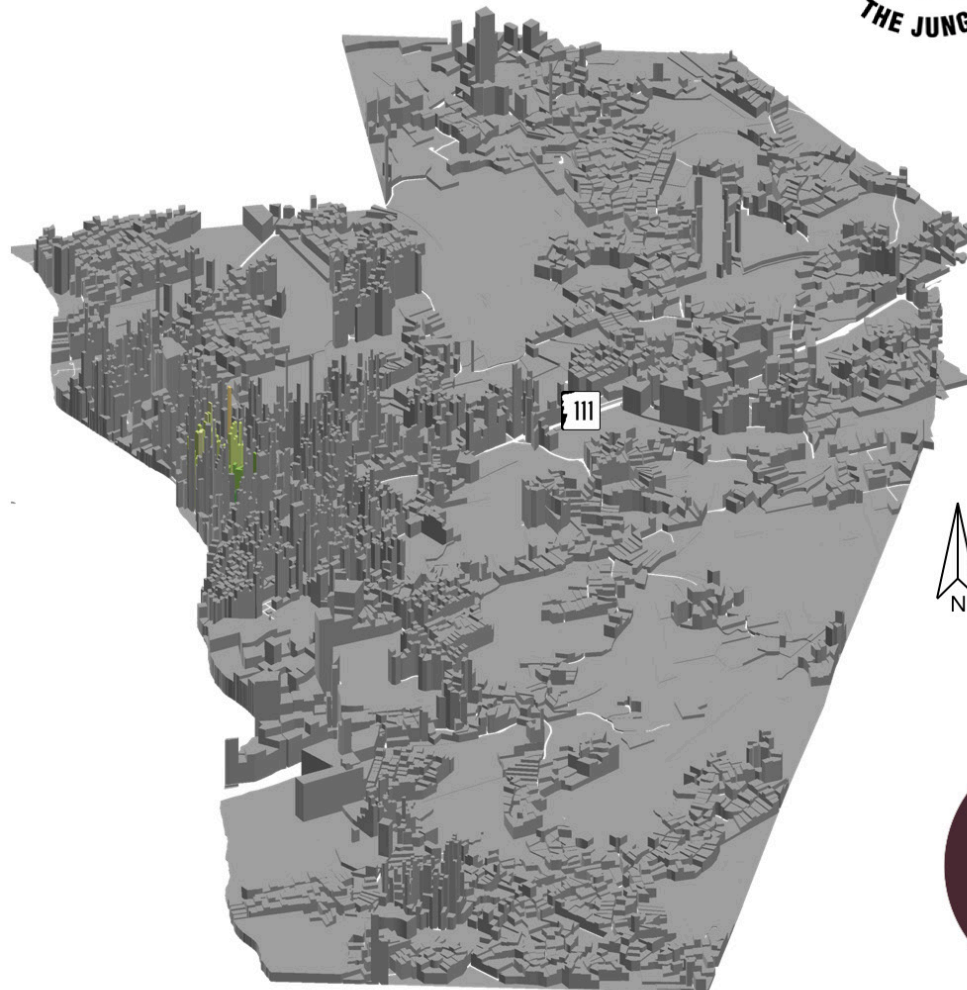
The total value map for Hudson shows a cluster of industrial properties, and the Green Meadows Golf Club in the southwest in valuable shades of orange and red. However, when mapped by value per acre, these large parcels with a lot of land and not much building turn green, and the small downtown node just to the north changes to a more productive shade of light green.



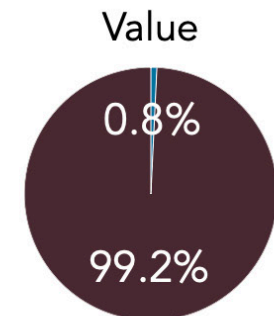
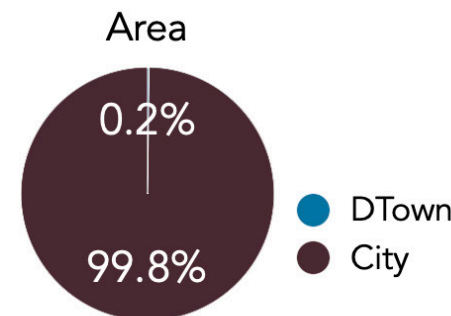
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Hudson. 87% of the land within Hudson is taxable and 13% is nontaxable. This balance gives the community a considerable amount of land to work with when it comes to working on projects that intensify land use. However, development should be focused on building value in downtown and not adding to the existing sprawl created by extensive single-family neighborhoods.



The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Hudson uses 0.2% of Hudson's land to generate 0.8% of Hudson's value. This 1:4 ratio means that, relative to its size, downtown Hudson is 4 times more productive than all of Hudson. This ratio is a sign that the downtown has not yet reached its full potential. Downtown Hudson grew up relying on Nashua for many commercial services, but as the 10th largest community in NH, a real opportunity to build an independent downtown node in the 3D model exists.

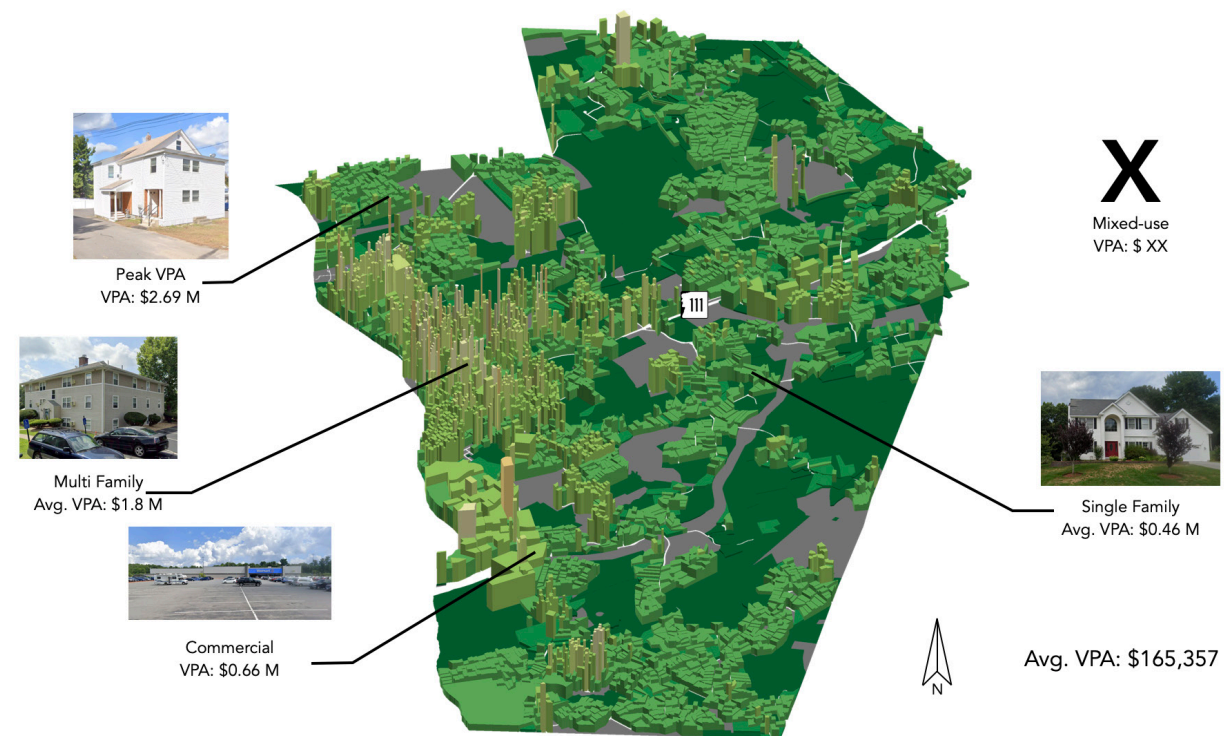


1:4

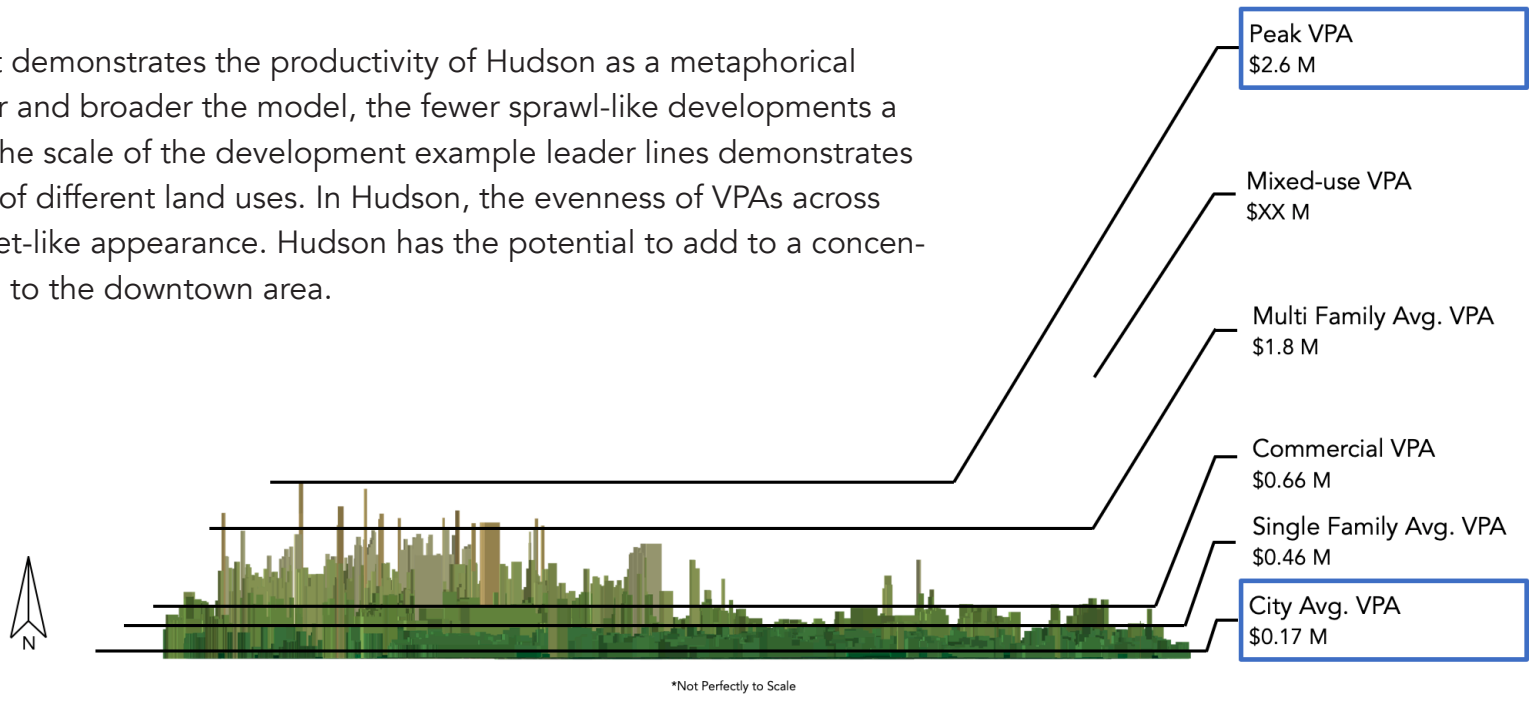




The map to the right highlights examples of typical buildings and developments in Hudson that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely are taller in the model. Hudson does not yet appear to have any mixed-use properties. The peak VPA in Hudson is a multi-family property. The average multi-family VPA is more than double the VPA of the typical commercial and average single-family VPAs.

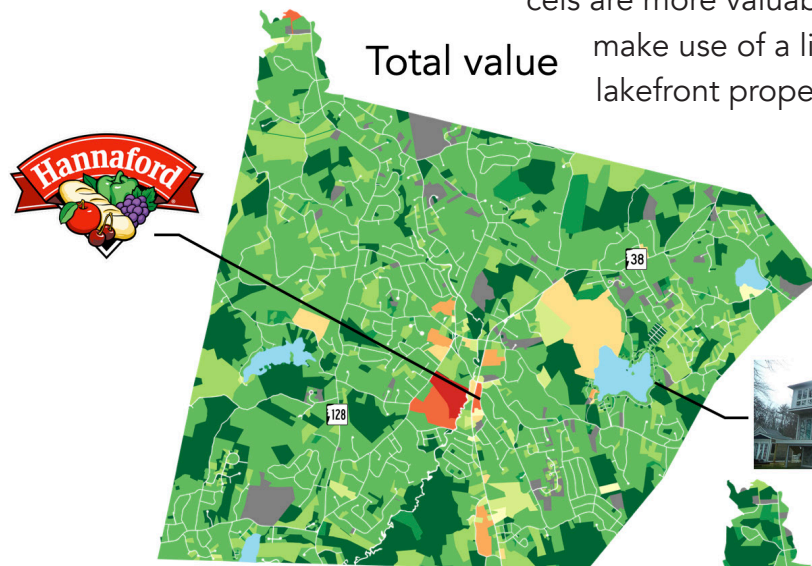


The diagram to the right demonstrates the productivity of Hudson as a metaphorical thermometer. The cooler and broader the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Hudson, the evenness of VPAs across land uses creates a carpet-like appearance. Hudson has the potential to add to a concentration of spikes of value to the downtown area.

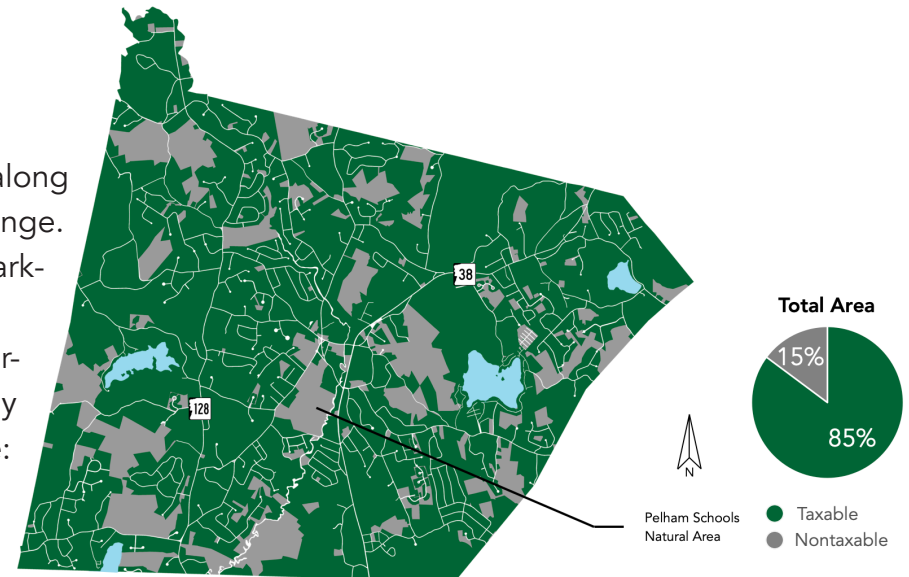
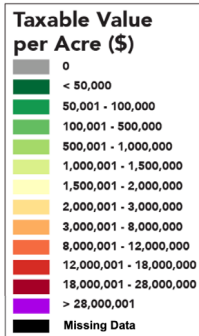
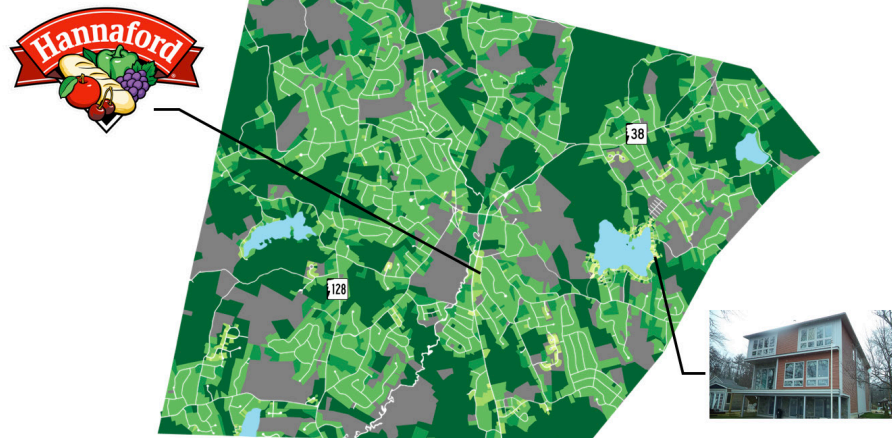


# PELHAM

The total value map for Pelham shows a row of commercial properties along NH Rte 38, including Hannaford supermarket, in valuable shades of orange. When mapped by value per acre, these commercial parcels with vast parking lots turn green, and the single-family properties around Little Island Pond appear in shades of mildly productive green. These residential parcels are more valuable because they make use of a limited resource: lakefront property.



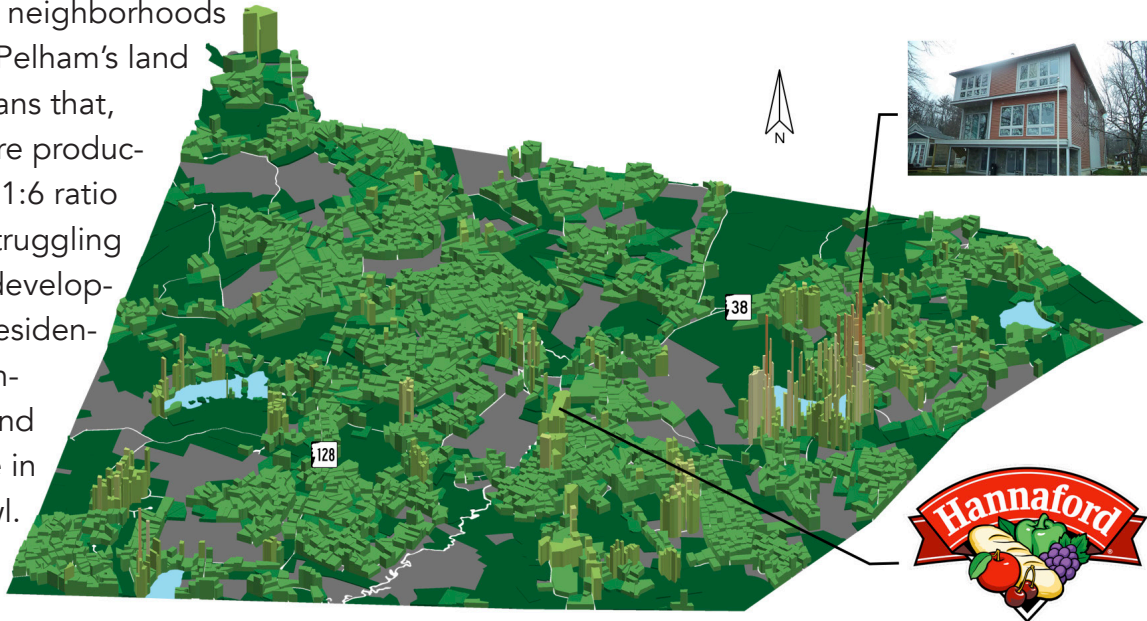
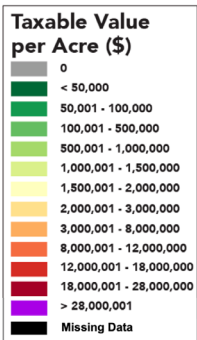
Value per acre



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Pelham. 85% of the land within Pelham is taxable and 15% is nontaxable. This balance gives the community a considerable amount of land to work with when it comes to working on projects that intensify land use. However, development should be focused on building a more distinct downtown. The intersection at Main St. and Marsh Rd. has potential for incremental mixed-use projects that don't contribute to sprawl development.



The value per acre metric allows us to compare entire neighborhoods within a community. Downtown Pelham uses 0.4% of Pelham's land to generate 0.8% of Pelham's value. This 1:2 ratio means that, relative to its size, downtown Pelham is two times more productive than all of Pelham. This ratio is less than a typical 1:6 ratio of a healthy downtown and is a sign of a downtown struggling to generate enough value to compensate for sprawl development. Downtown Pelham is at the center of a highly residential area and has the potential to build alternative commercial and residential options. Adding multi-family and mixed-use buildings would create new spikes of value in the 3D model that would help cover the cost of sprawl.

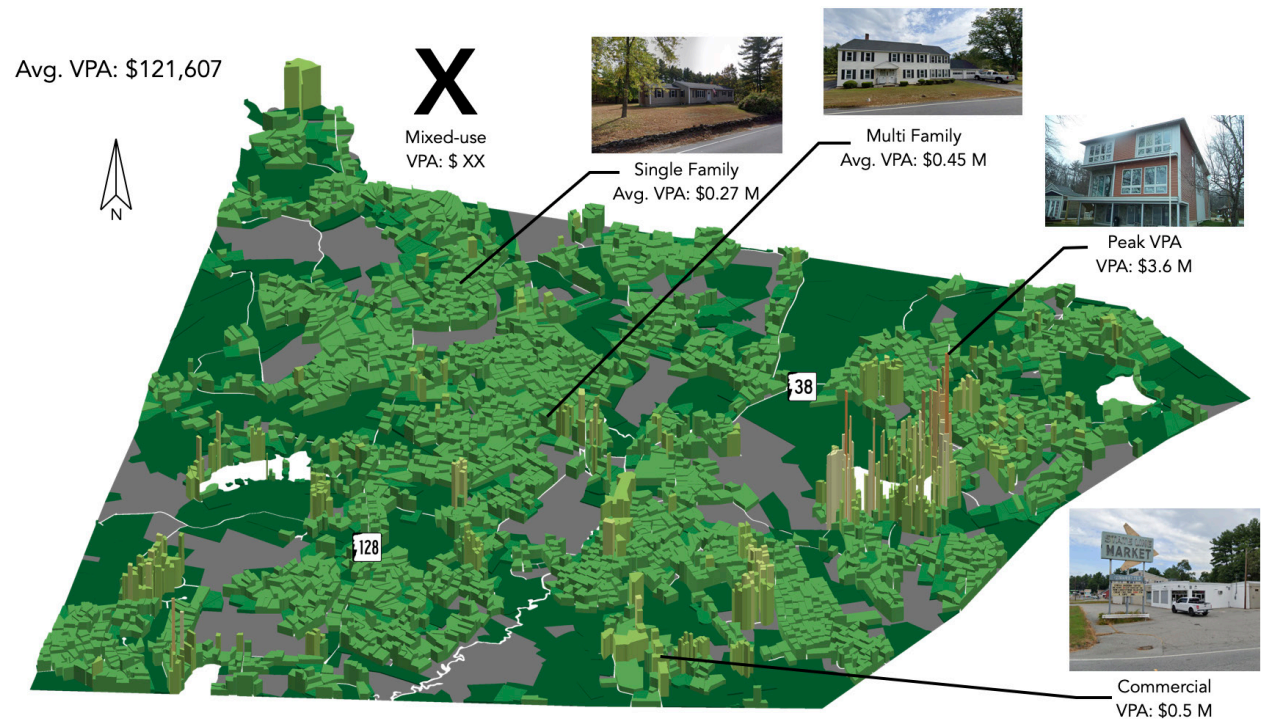


1:2.1

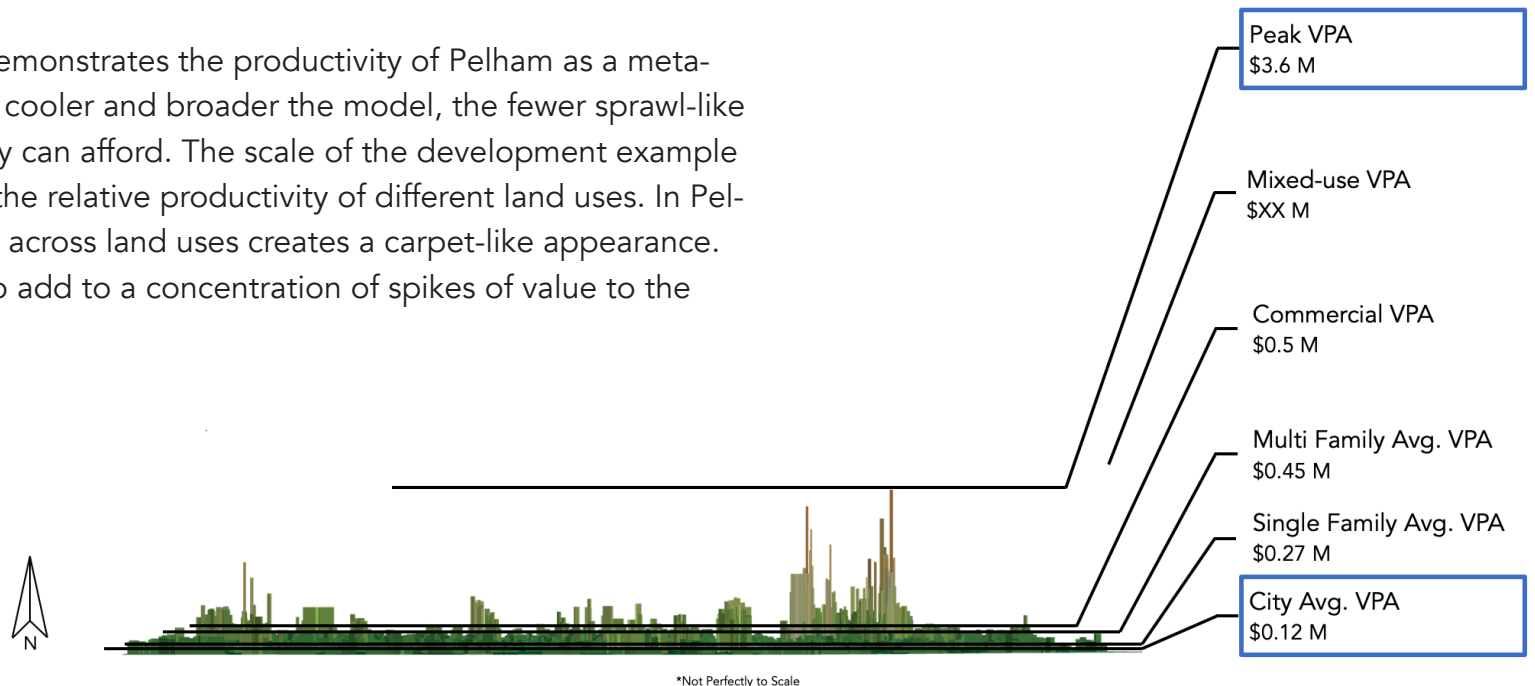




The map to the right highlights examples of typical buildings and developments in Pelham that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely are taller in the model. Pelham does not yet appear to have any mixed-use properties. The peak VPA in Pelham is a single-family property. Outside of the peak VPA and a few other lakefront properties, the typical VPAs of mixed-use, residential, and commercial properties are relatively analogous.



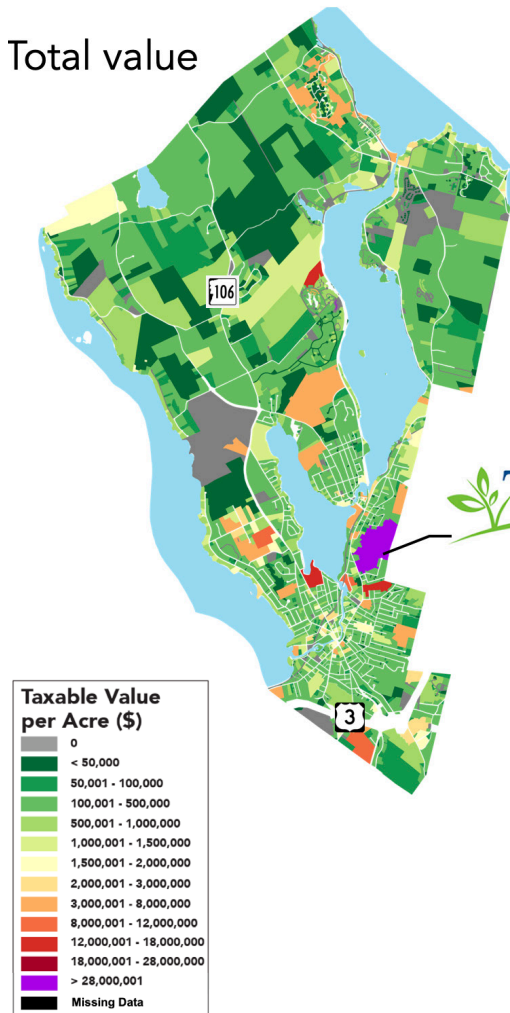
The diagram to the right demonstrates the productivity of Pelham as a metaphorical thermometer. The cooler and broader the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Pelham, the evenness of VPAs across land uses creates a carpet-like appearance. Pelham has the potential to add to a concentration of spikes of value to the downtown area.



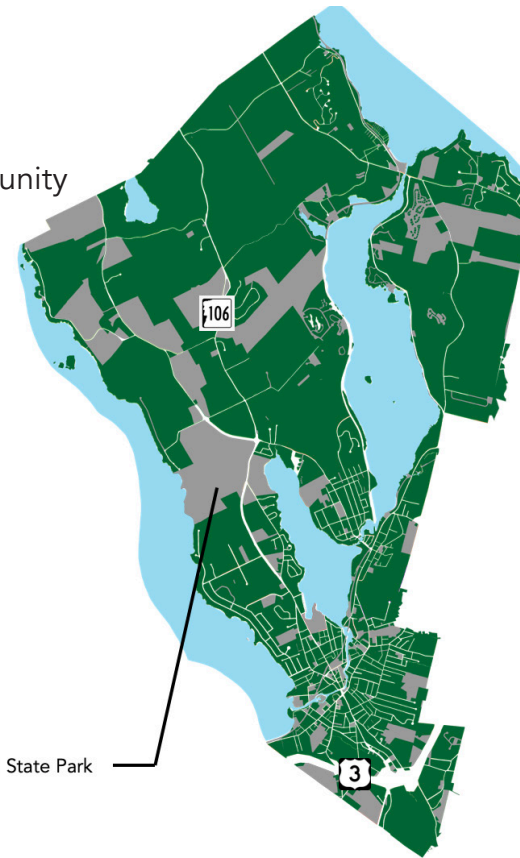
# LACONIA

The total value map for Laconia shows a golf course and a few residential community properties, like the Taylor retirement community, as high value and in shades of orange and purple. However, when mapped by value per acre, these large parcels with a lot of land and not much building turn green, and the small lakefront properties experience a “lake effect” and change to yellow and orange.

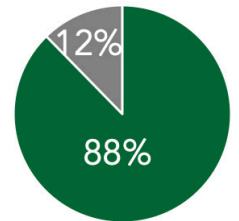
Total value



Value per acre



Total Area

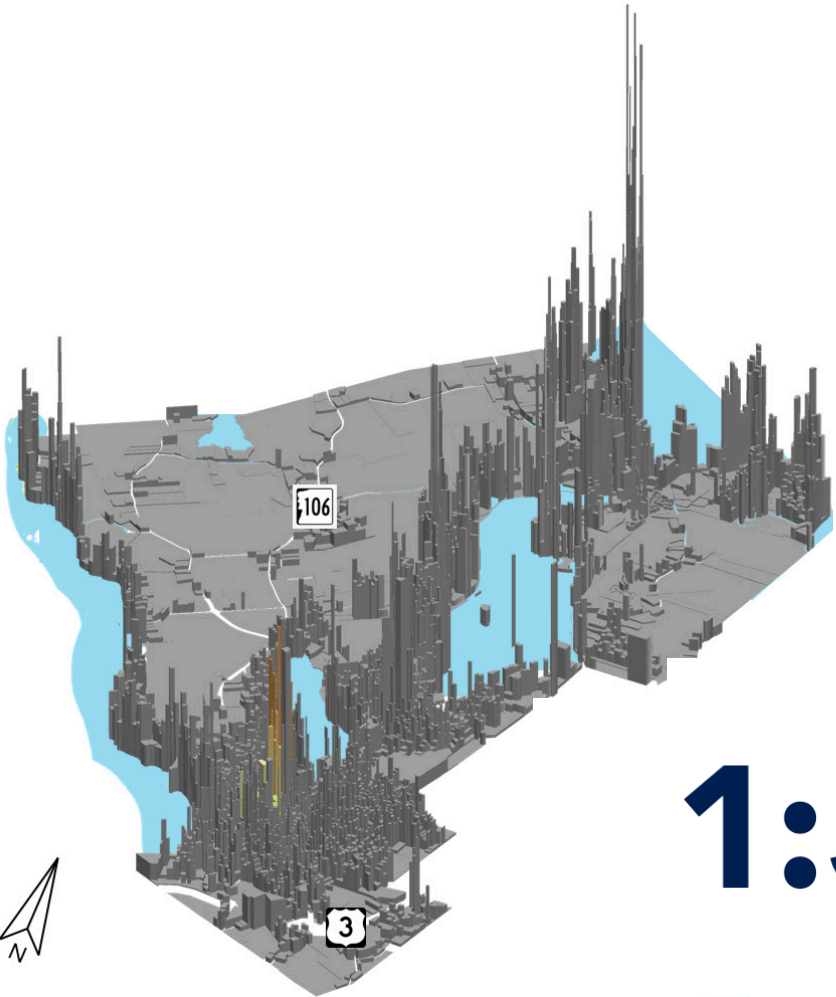
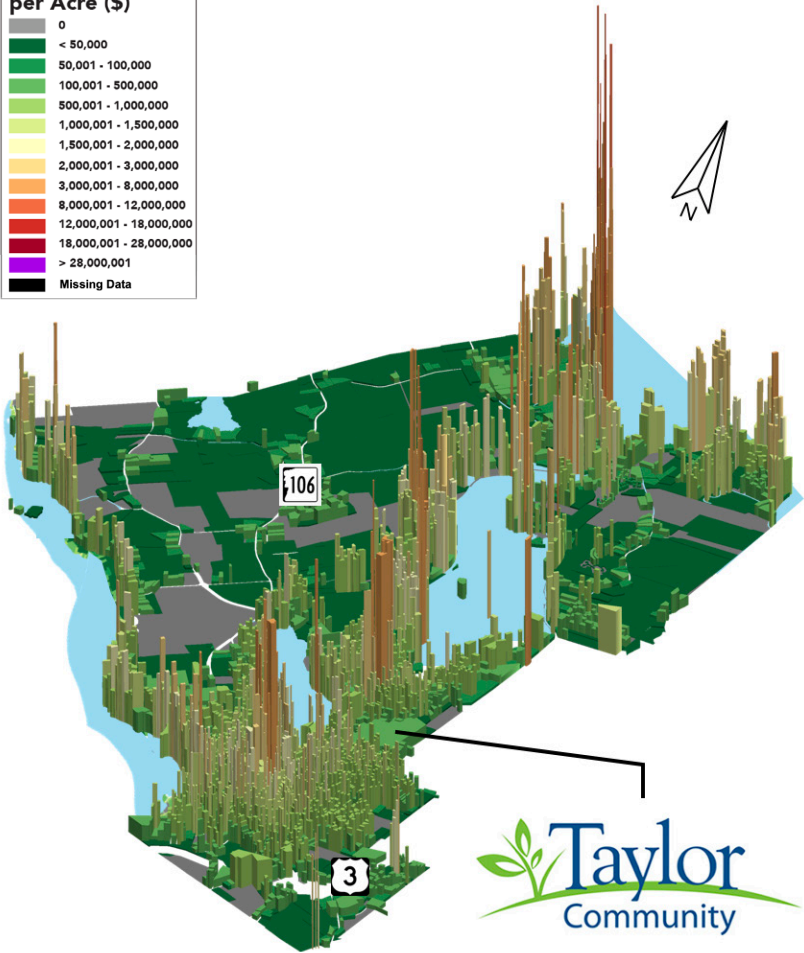
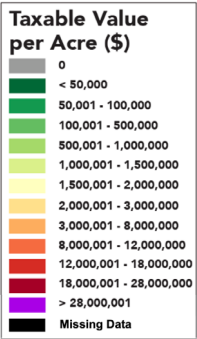


● Taxable  
● Nontaxable

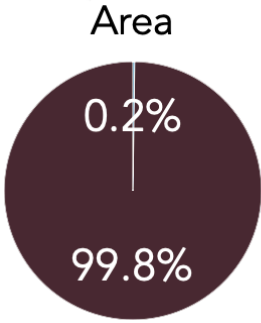


The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Laconia. 88% of the land within Laconia is taxable and 12% is nontaxable. This balance gives the community a considerable amount of land to work with when it comes to working on projects that intensify land use. The amount of nontaxable land dedicated to parking in downtown Laconia provides an opportunity to add density with new projects that still include parking, but make more efficient use of the land.

The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Laconia uses 0.2% of Laconia’s land to generate 1.2% of Laconia’s value. This 1:5 ratio means that, relative to its size, downtown Laconia is 5 times more productive than all of Laconia. This ratio is a sign that the downtown has not yet reached its full potential. Downtown Laconia is competing with high value lake effect properties, but the concentration of mixed-use buildings and for-rent commercial space has the potential to far outperform valuable single-family parcels. Refurbishing historic mixed-use buildings and transforming large surface parking lots in downtown into new development would create new spikes of value in the 3D model.

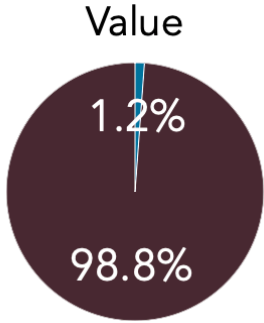


1:5



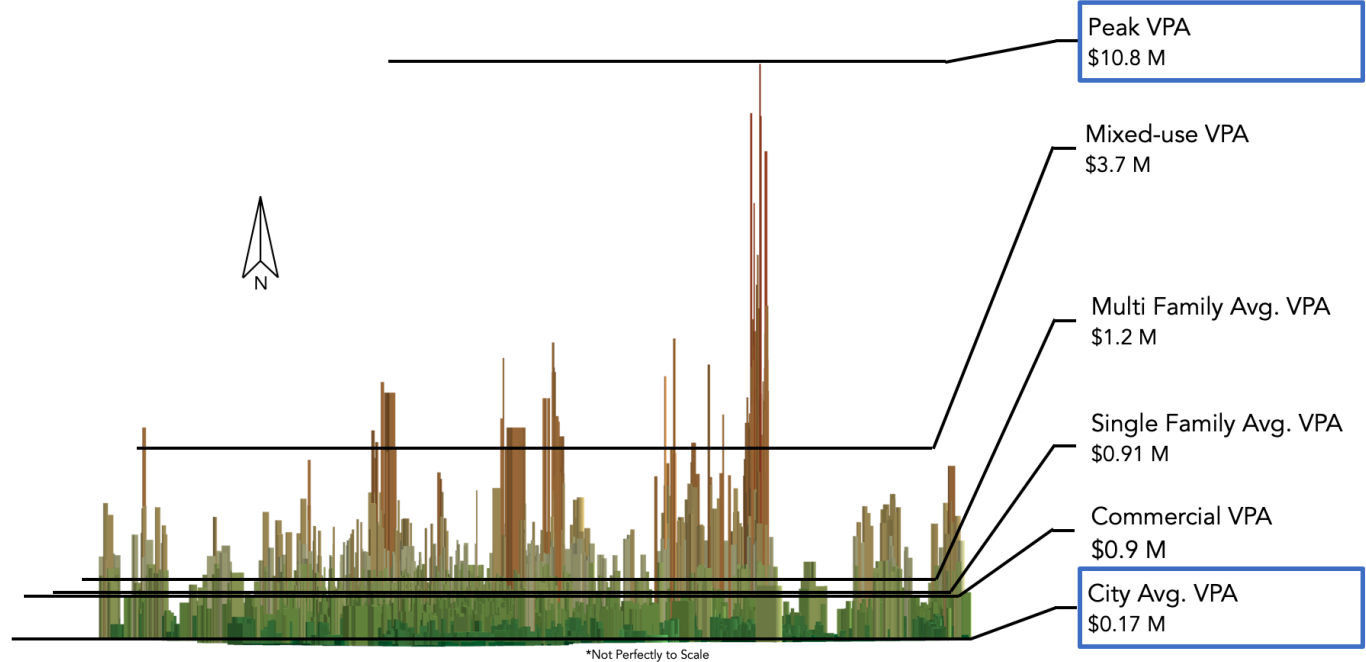
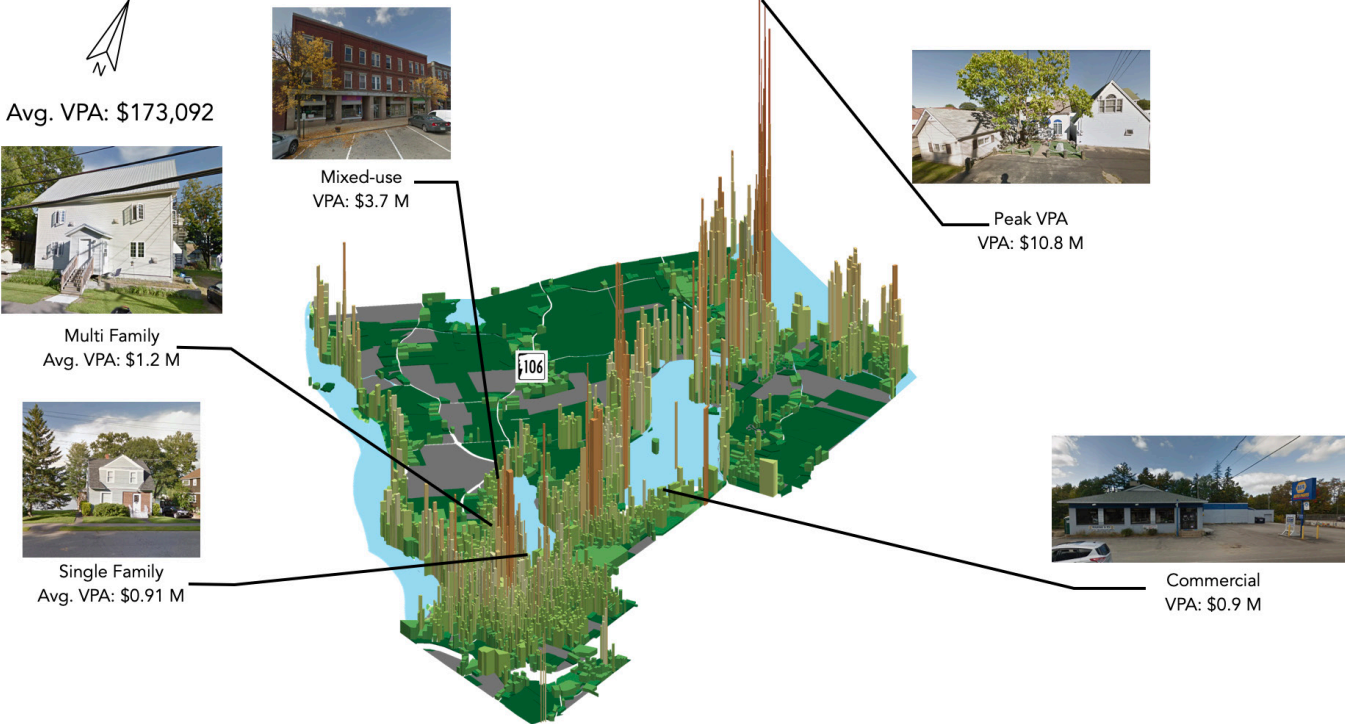
● Downtown

● City





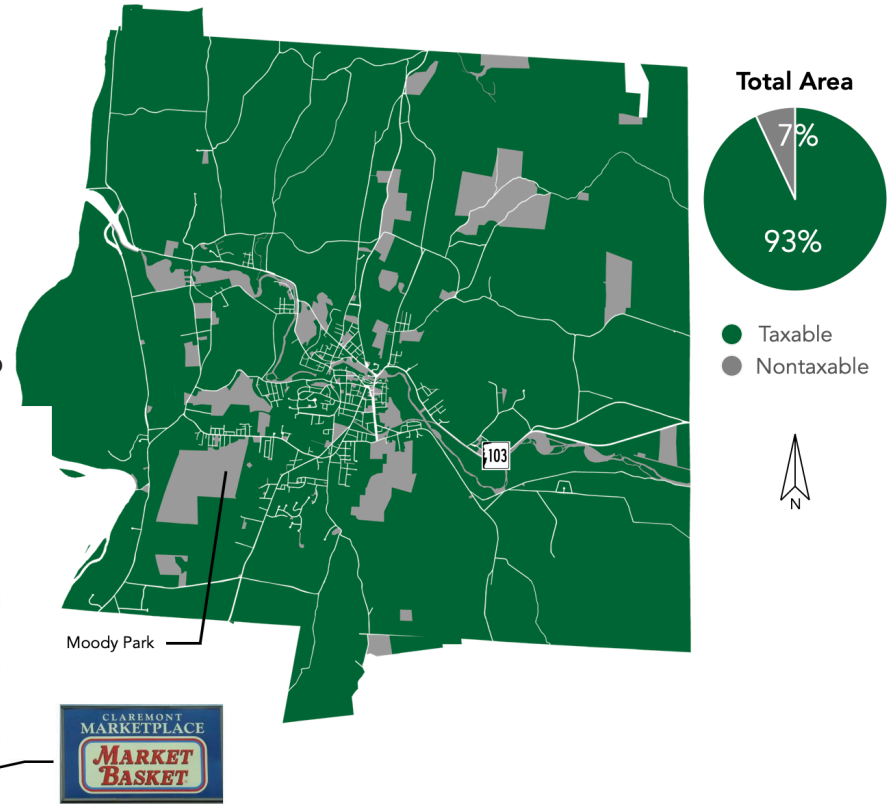
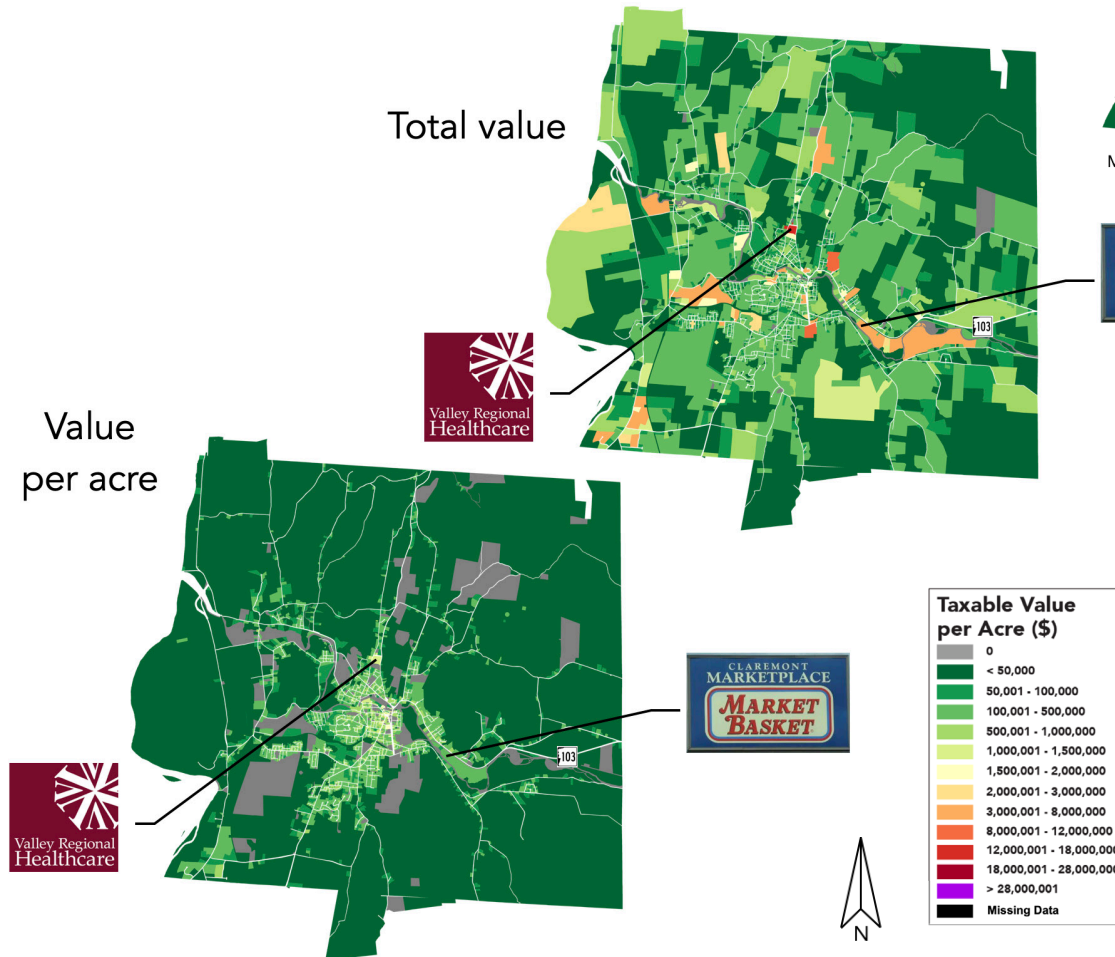
The map to the right highlights examples of typical buildings and developments in Laconia that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The peak VPA in Laconia is a single-family, lakefront property with a dock. Outside of the peak VPA and a few other lakefront properties, the typical VPAs of mixed-use, residential, and commercial properties are relatively analogous.



The diagram to the left demonstrates the productivity of Laconia as a metaphorical thermometer. The cooler and broader the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Laconia, the evenness of VPAs across land uses creates a carpet-like appearance. Laconia has the potential to add to a concentration of spikes of value to the downtown area.

# CLAREMONT

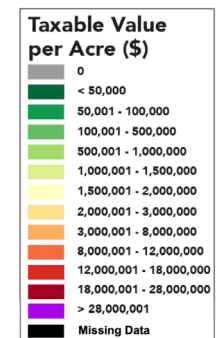
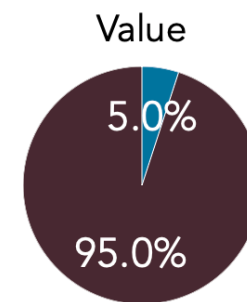
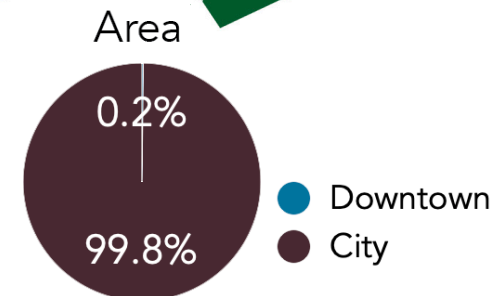
The total value map for Claremont shows large properties along the NH Rte 103 commercial corridor, like Market Basket, as high value and in shades of orange. However, when mapped by value per acre, the big-box store properties are revealed to be low productivity and fade to green. Vast parking lots and inexpensive building materials contribute to the low productivity of a typical big-box store.



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Claremont. 93% of the land within Claremont is taxable and 7% is nontaxable. This balance gives the community a considerable amount of land to work with when it comes to working on projects that intensify land use and build density. Considering the balance of taxable and nontaxable land is important when it comes to development decisions that affect how much land is available to generate revenue.

The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Claremont uses 0.2% of Claremont's land to generate 5% of Claremont's value. This 1:26 ratio means that, relative to its size, downtown Claremont is 26 times more productive than all of Claremont. This ratio is a sign of a healthy downtown. However, the land outside of downtown is very unproductive, and completely undeveloped in some areas. This dynamic exaggerates the productivity of downtown to a degree. Claremont could make use of its empty historic buildings. Newly refurbished mixed-use buildings, like the Goddard Block, would create new spikes of value in the 3D model.

# 1:26

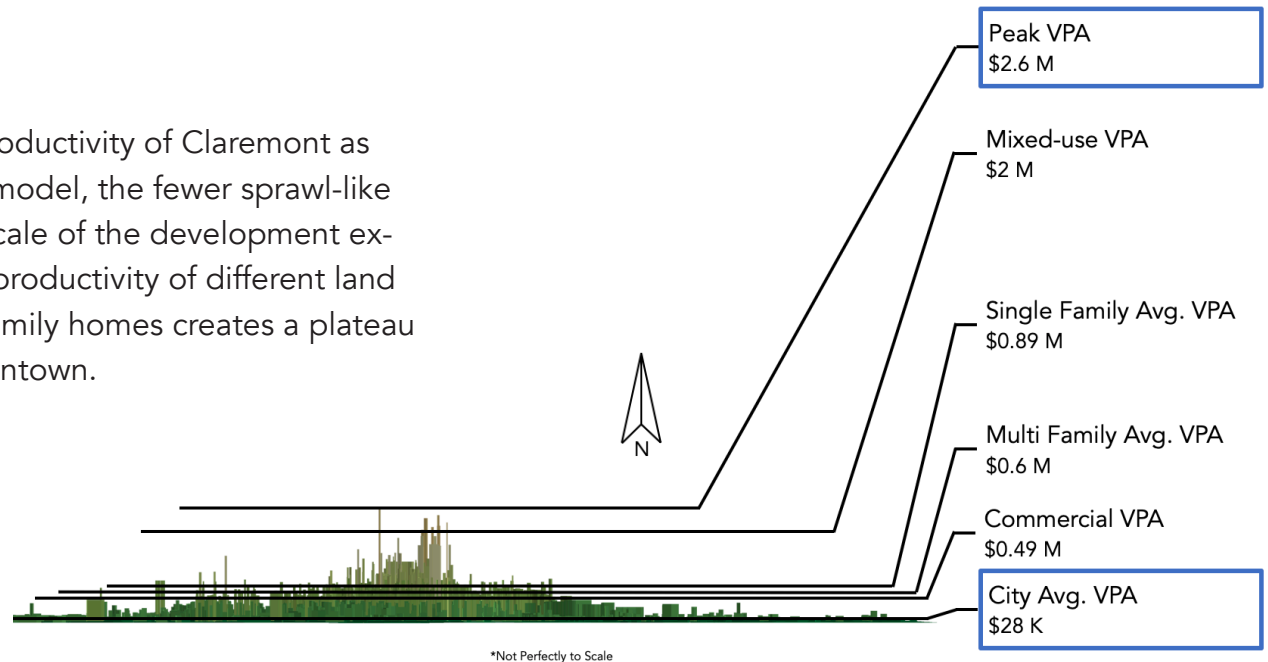




The map to the right highlights examples of typical buildings and developments in Claremont that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The VPA of the single-family example is nearly double the VPA of a typical commercial property. Although single-family housing parcels often have large yards with inexpensive construction, the expansive parking lots of big-box stores and fast food franchises have an incredibly de-valuing effect.

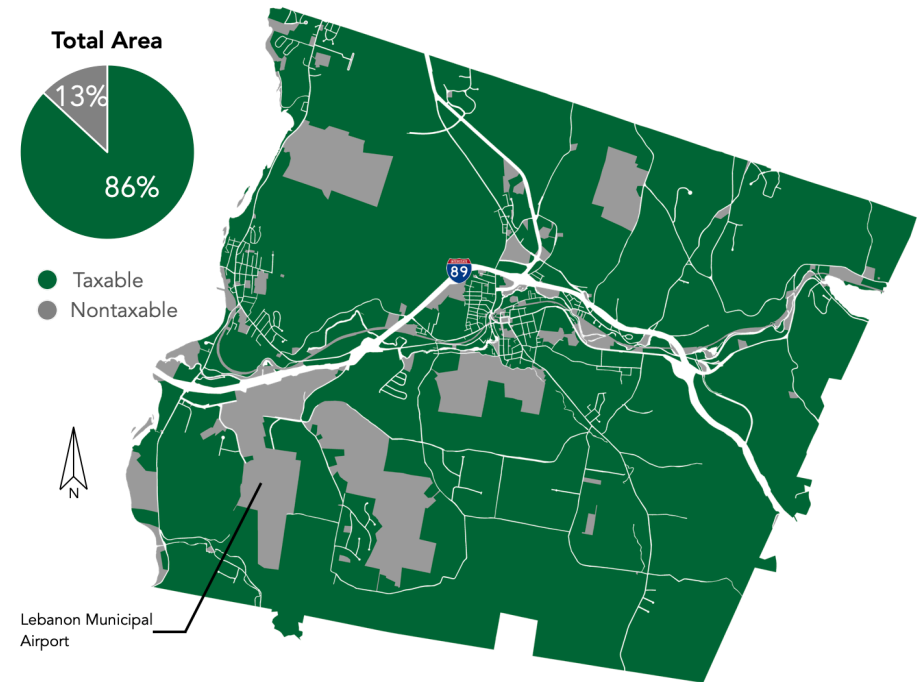
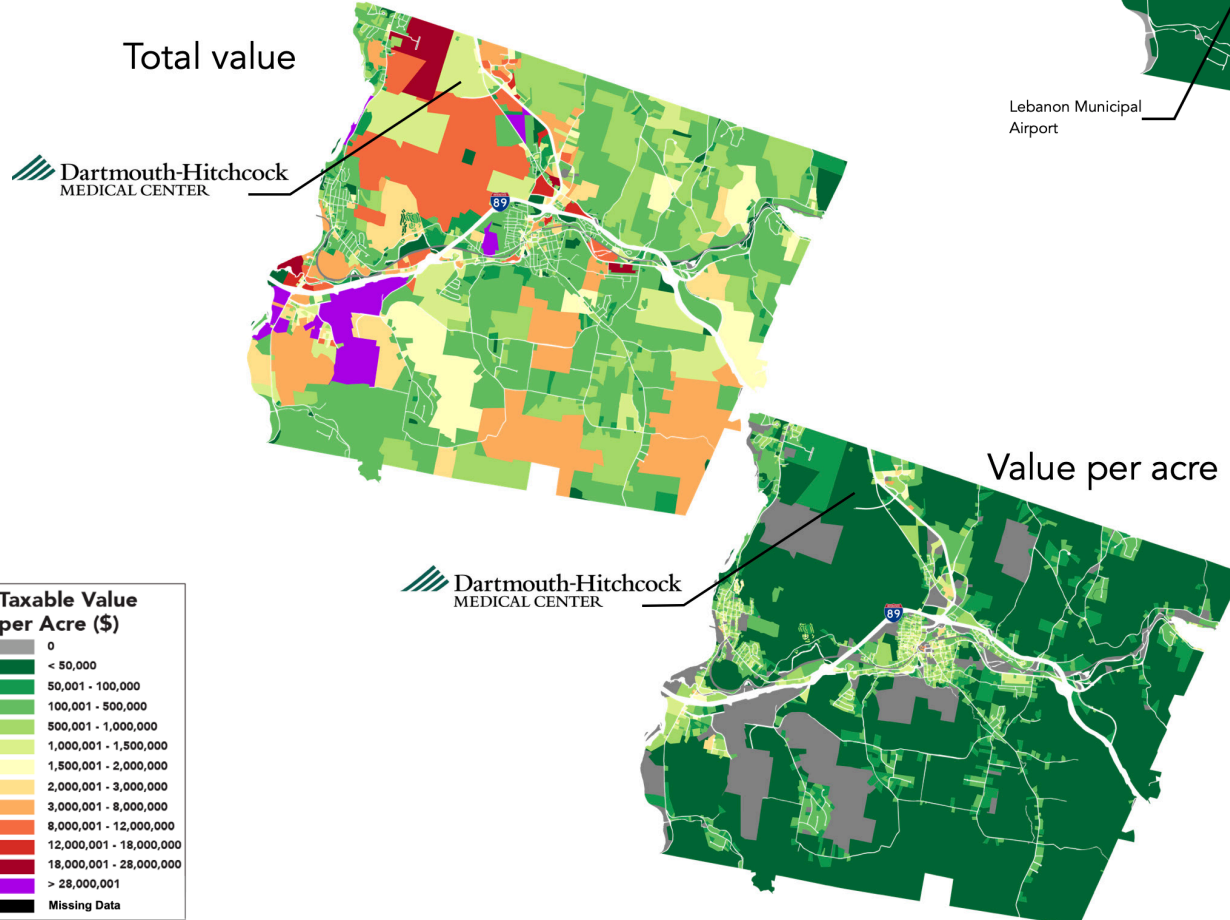


The diagram to the right demonstrates the productivity of Claremont as a metaphorical thermometer. The cooler the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Claremont, an abundance of single-family homes creates a plateau of low value around the more productive downtown.



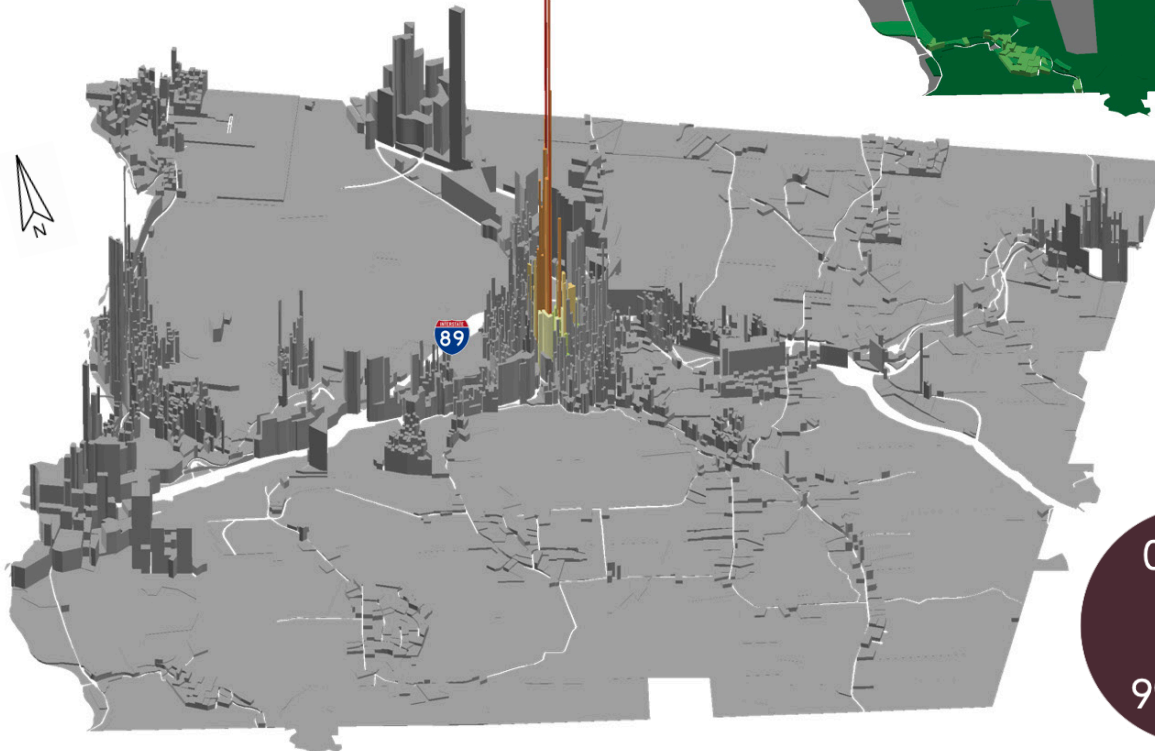
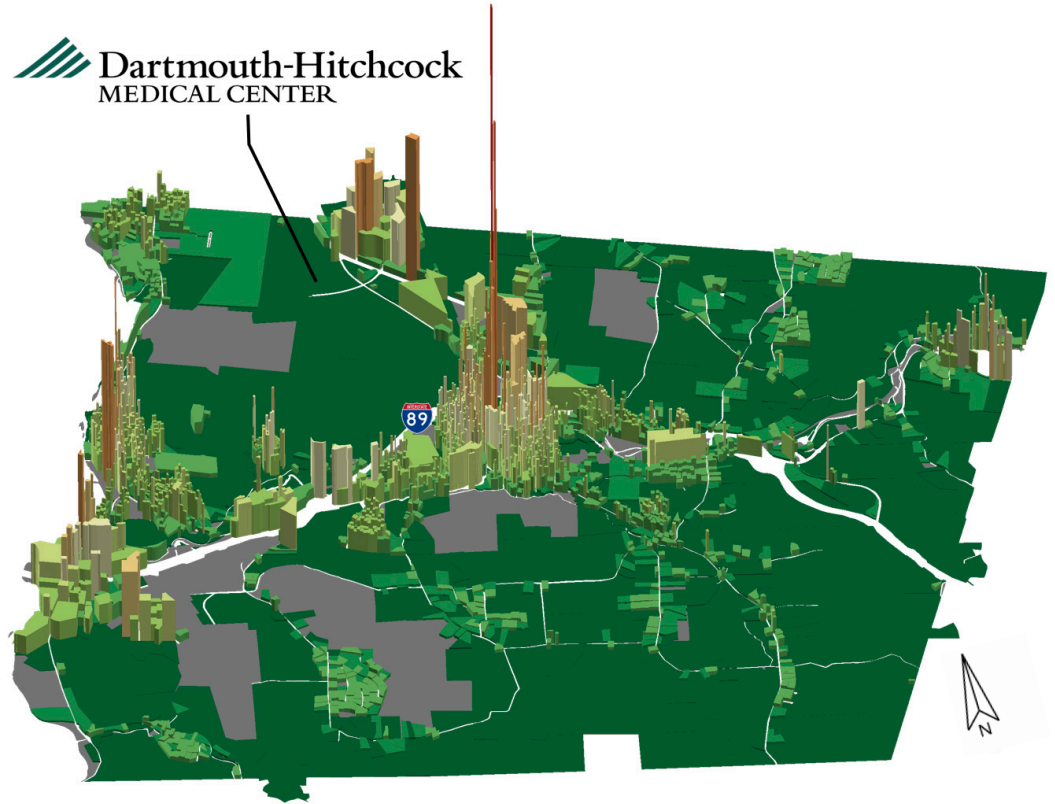
# LEBANON

The total value map for Lebanon shows large properties north and south of I-89 in orange and purple and the Dartmouth-Hitchcock hospital appears a mid-range value shade of green. When mapped by value per acre, these large, undeveloped parcels fade to green, and the hospital changes to dark green. Large parcels often appear valuable because of their size, despite their low productivity. While the hospital is valuable, it's surrounded by a sea of parking, which reduces its productivity.

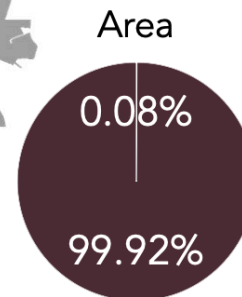


The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Lebanon. The balance of taxable and nontaxable land is important when considering the proportion of revenue-producing land to the tax-exempt land that uses city services without generating revenue. 86% of the land within Lebanon is taxable and 13% is nontaxable. The airport represents a large portion of the nontaxable land.

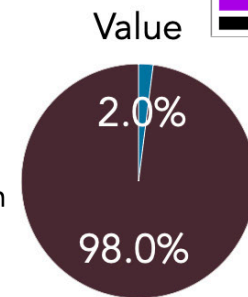
The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Lebanon uses 0.8% of Lebanon's land to generate 2% of Lebanon's value. This 1:25 ratio means that, relative to its size, downtown Lebanon is 25 times more productive than all of Lebanon. The prevalence of several clusters of orange and yellow spikes in the 3D model indicates that Lebanon is polynodal, it has several nodes of productivity outside of downtown. While nodes boost overall value, multiple commercial hubs compete with Lebanon's small downtown. Lebanon could focus on adding mixed-use development that would further distinguish downtown Lebanon as the primary node.



**1:25**

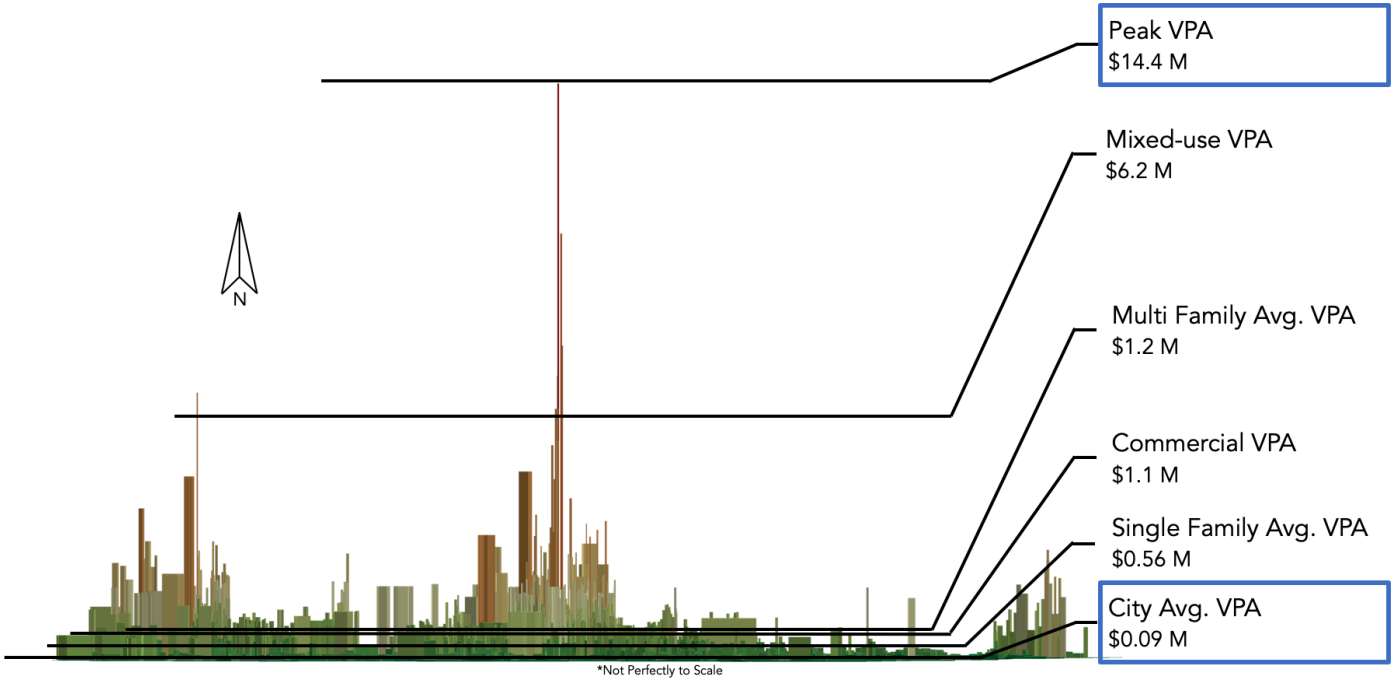
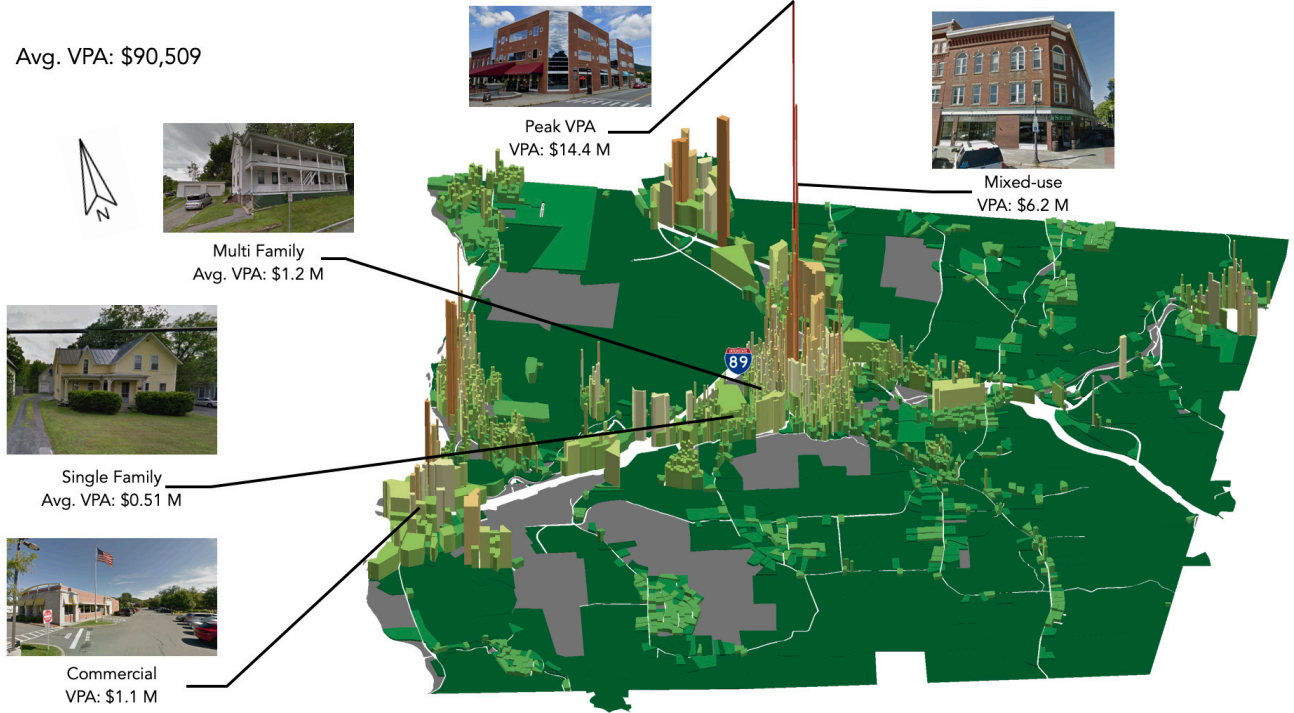


DTown  
City





The map to the left highlights examples of typical buildings and developments in Lebanon that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The average VPA of multi-family parcels is more than twice the average VPA of single-family parcels. Although multi-family parcels can have yards and parking, they are more flexible in design. Multi-family can be built in a way that eliminates expansive lawns and adds multiple stories to buildings, both of which boost value.



The diagram to the left demonstrates the productivity of Lebanon as a metaphorical thermometer. The hotter the model, the more amenities and less-productive development a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. Despite multiple nodes, the majority of mixed-use parcels with typical VPAs of \$6.2 M are in downtown Lebanon.

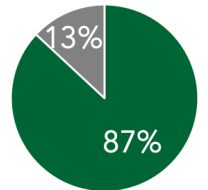
# PETERBOROUGH

The total value map for Peterborough shows large properties north of downtown in orange and the RiverMead retirement community appears purple. When mapped by value per acre, these large, undeveloped parcels fade to green, and RiverMead changes to a lower-productivity shade of green. Large parcels often appear valuable because of their size, despite their low productivity. While RiverMead is valuable, it's surrounded by vast parking lots, driveways, and open space, which reduces its productivity.

MacDowell Reservoir

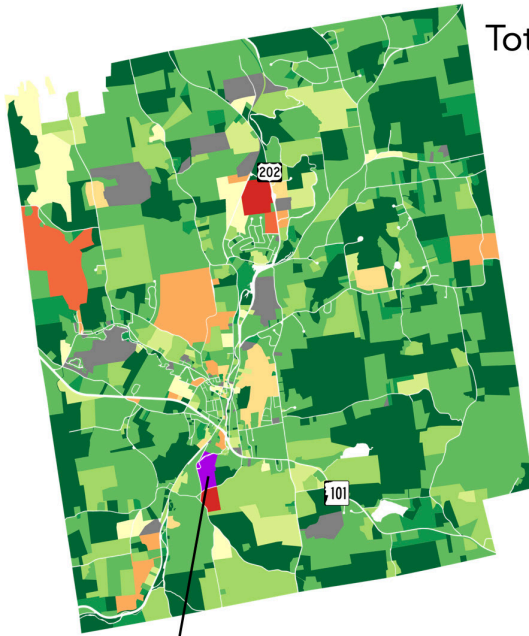


Total Area



● Taxable  
● Nontaxable

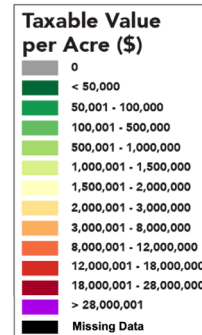
Total value



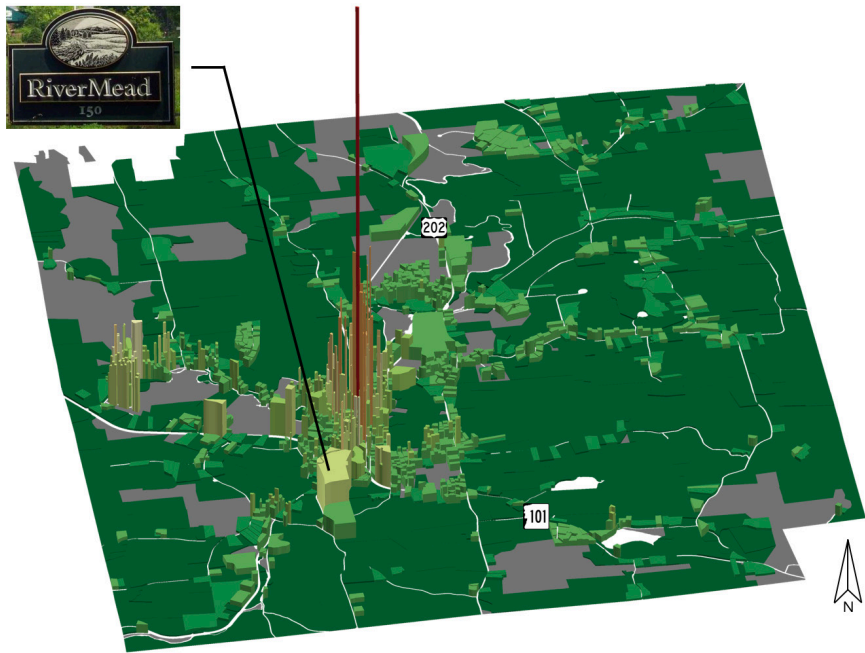
Value per acre



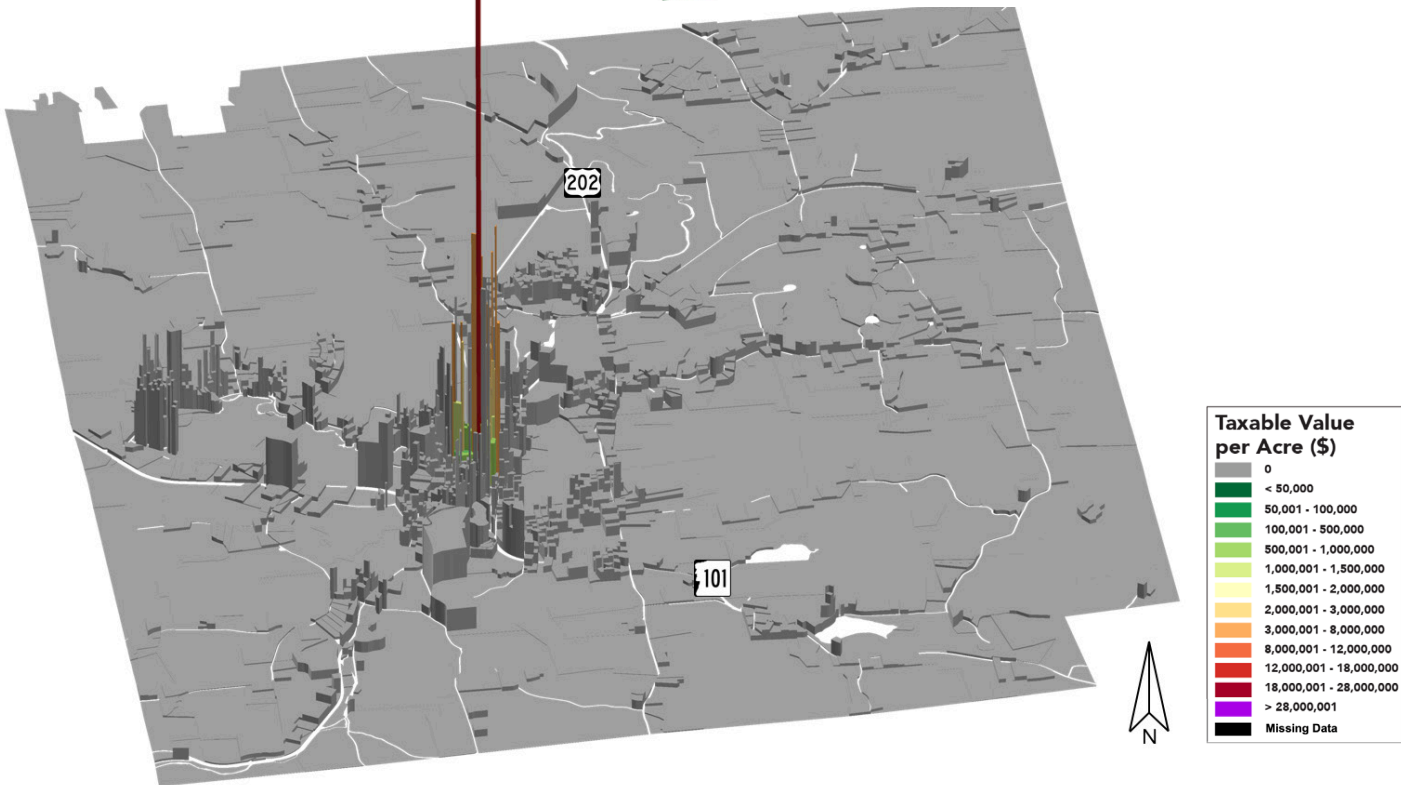
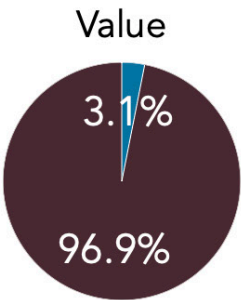
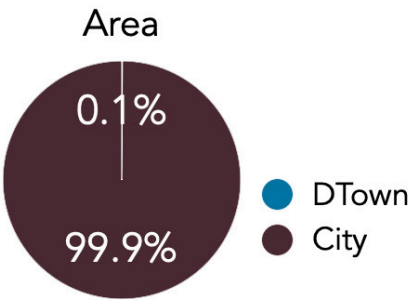
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Peterborough. The balance of taxable and nontaxable land is important when considering the proportion of revenue-producing land to the tax-exempt land that uses city services without generating revenue. 87% of the land within Peterborough is taxable and 13% is nontaxable. The MacDowell Reservoir represents a large portion of the nontaxable land.



The value per acre metric allows us to compare entire neighborhoods within a community. Downtown Peterborough uses 0.1% of Peterborough's land to generate 3.1% of Peterborough's value. This 1:32 ratio means that, relative to its size, downtown Peterborough is 32 times more productive than all of Peterborough. This ratio is a sign of a healthy downtown. However, the land outside of downtown is very unproductive, and largely undeveloped in some areas. This dynamic exaggerates the productivity of downtown to a degree. Peterborough could add multi-family and mixed-use properties to shore up the already strong downtown.

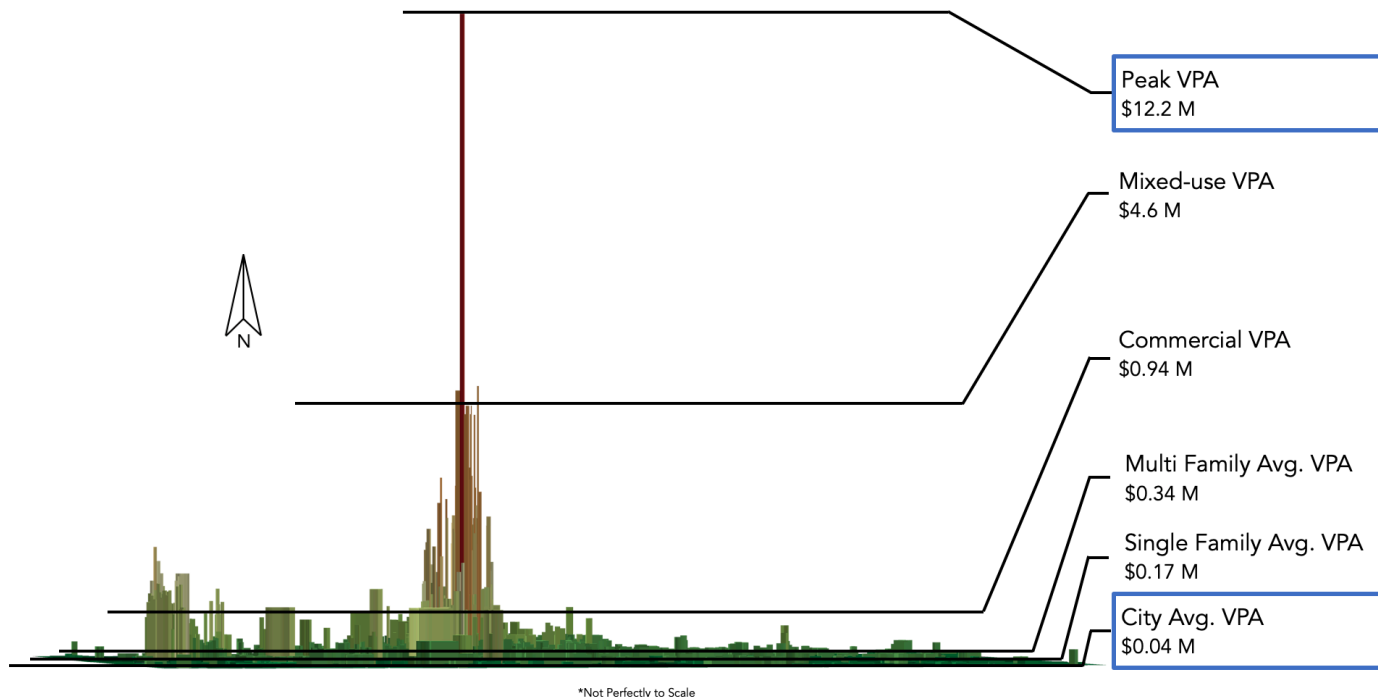
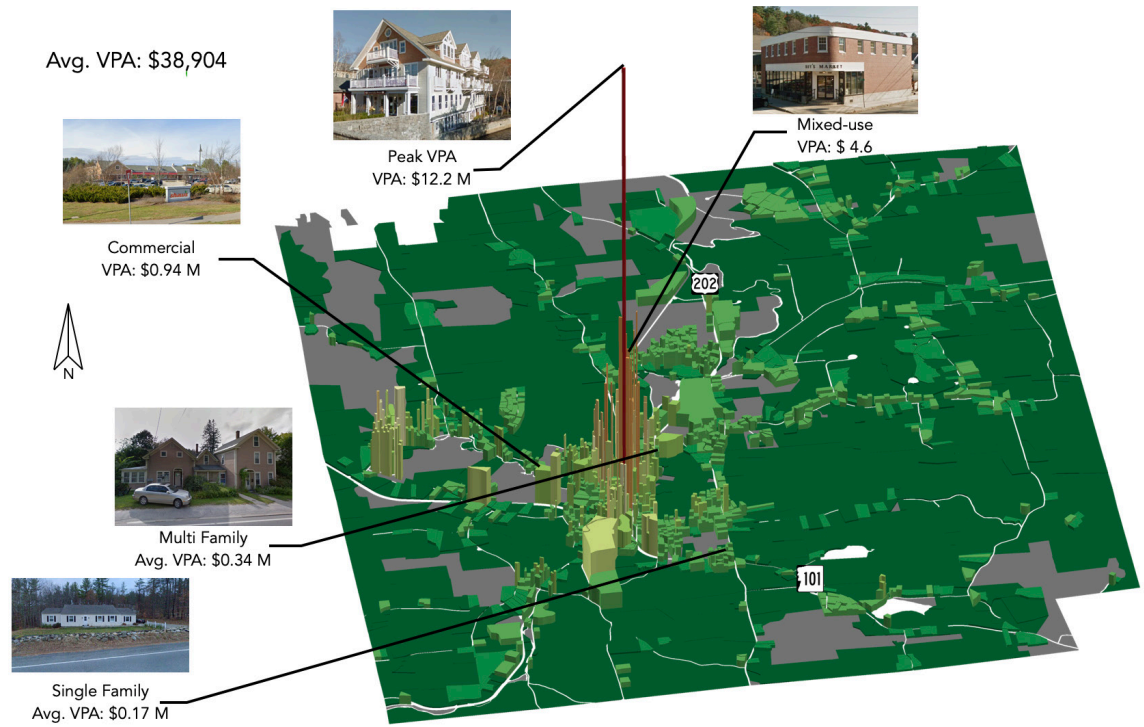


# 1:32





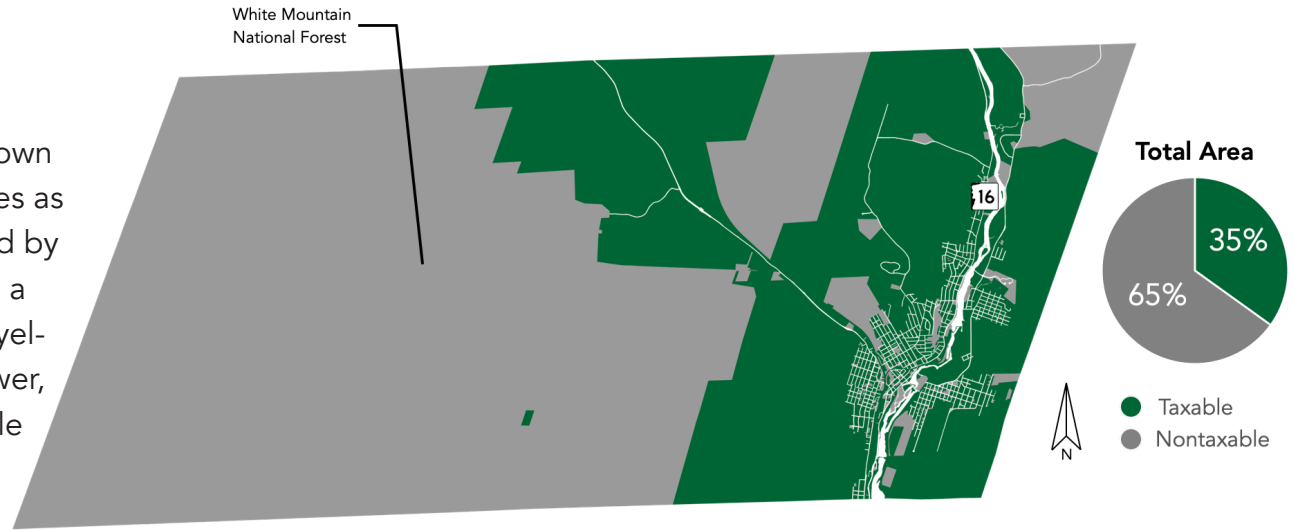
The map to the right highlights examples of typical buildings and developments in Peterborough that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The average VPA of mixed-use parcels is almost 5 times the typical VPA of a solely commercial parcel. Combining uses, especially along the Contoocook River, would grow productivity in Peterborough.



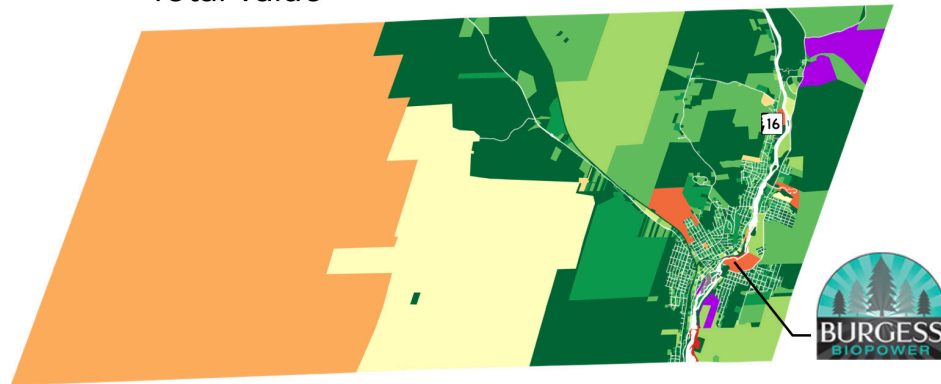
The diagram to the left demonstrates the productivity of Peterborough as a metaphorical thermometer. The hotter the model, the more amenities and less-productive development a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Peterborough, the peak VPA stands out, but is supported by a solid group of mixed-use parcels that outperform lower-productivity parcels.

# BERLIN

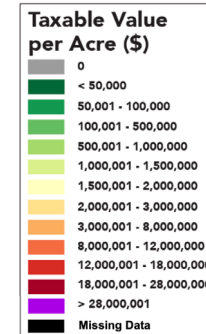
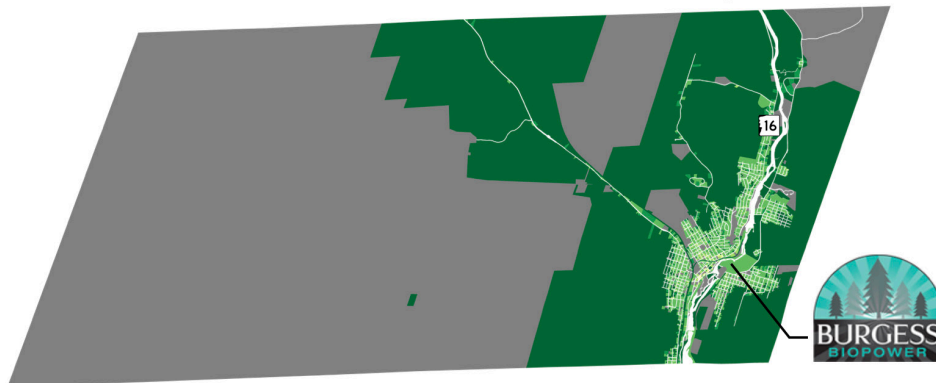
The total value map for Berlin shows downtown Berlin in green and a few industrial properties as valuable in shades of orange. When mapped by value per acre, downtown Berlin changes to a mid-range value shade of green with some yellow. The industrial sites, like Burgess Biopower, change from orange to green. Berlin has little sprawl, so nearly all of the value is concentrated around the urban core.



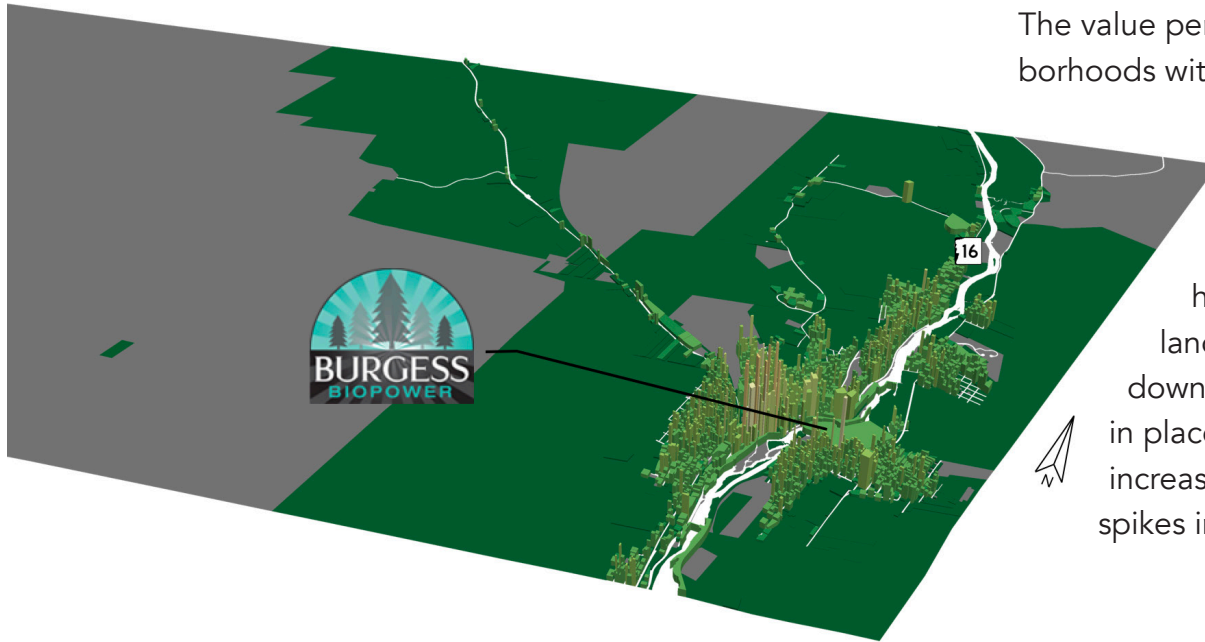
Total value



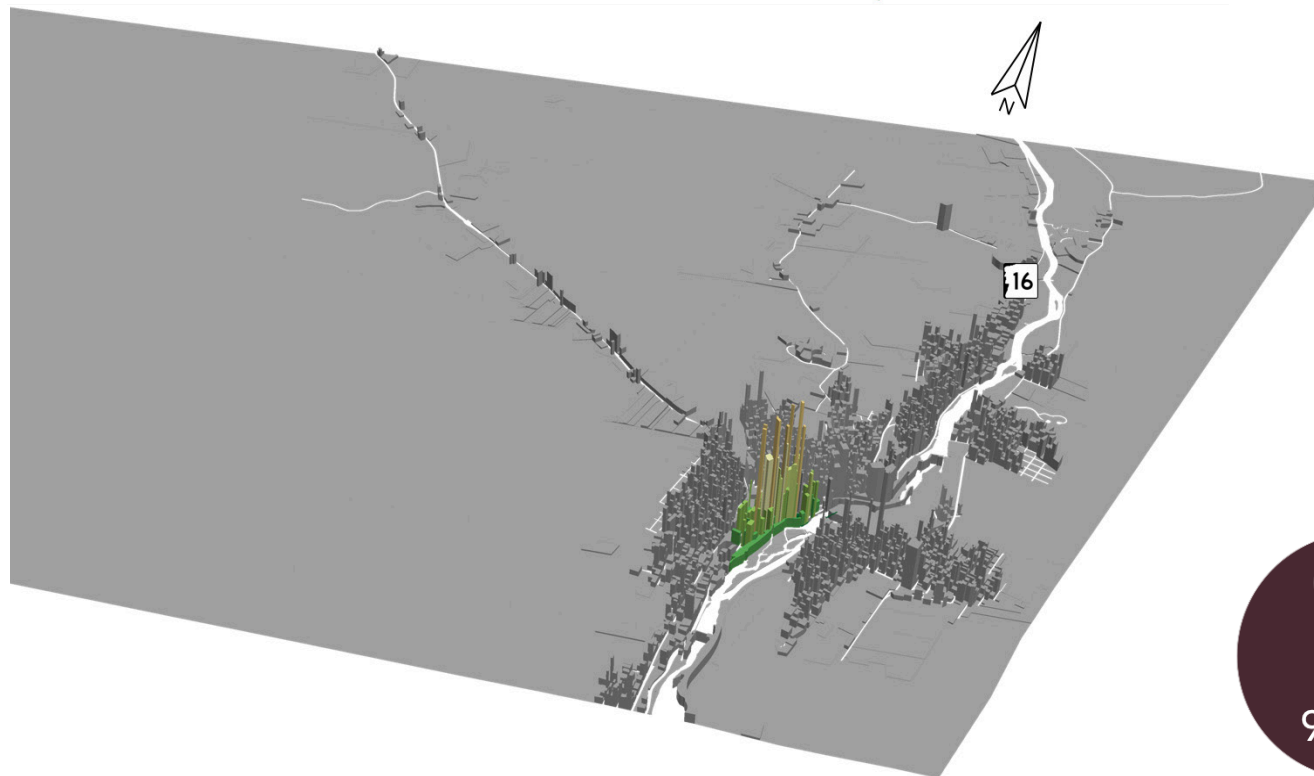
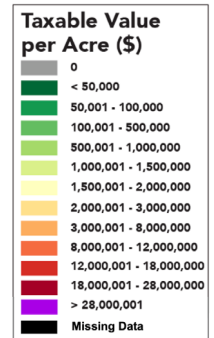
Value per acre



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Berlin. 35% of the land within Berlin is taxable and 65% is nontaxable. In what is our most interesting balance of taxable and nontaxable land, much of Berlin is home to the White Mountains National Forest and other natural conservation areas. This balance gives the community a limited amount of land to work with when it comes to working on projects that intensify land use and build density.



The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Berlin uses 0.6% of Berlin's land to generate 3.3% of Berlin's value. This 1:51 ratio means that, relative to its size, downtown Berlin is 51 times as productive as all of Berlin. A ratio greater than 1:6 is usually a sign of a healthy downtown. However, so much of Berlin's land is undeveloped that it distorts the intensity of downtown's productivity. Berlin has the grid network in place to add walkable mixed-use development and increase density, which would create more spikes in the 3D model.

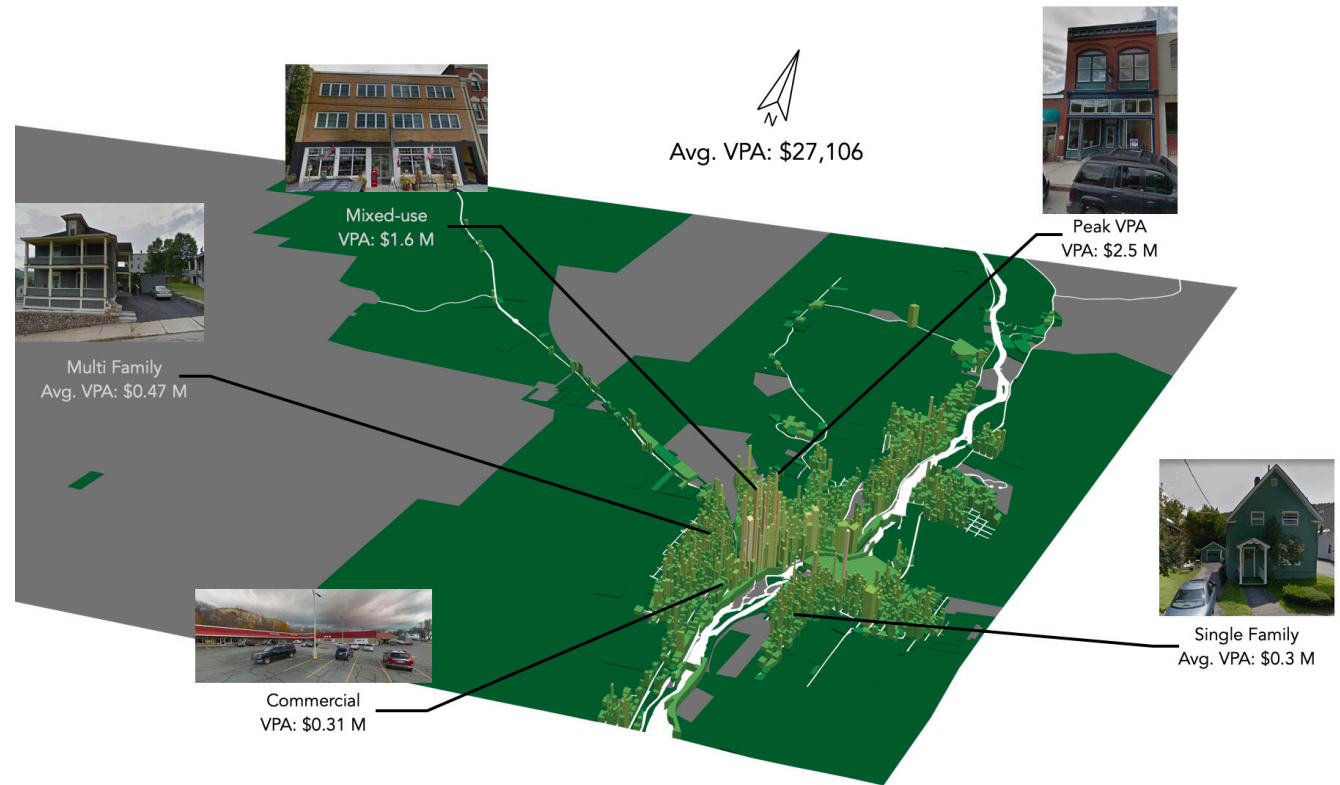


# 1:51.3

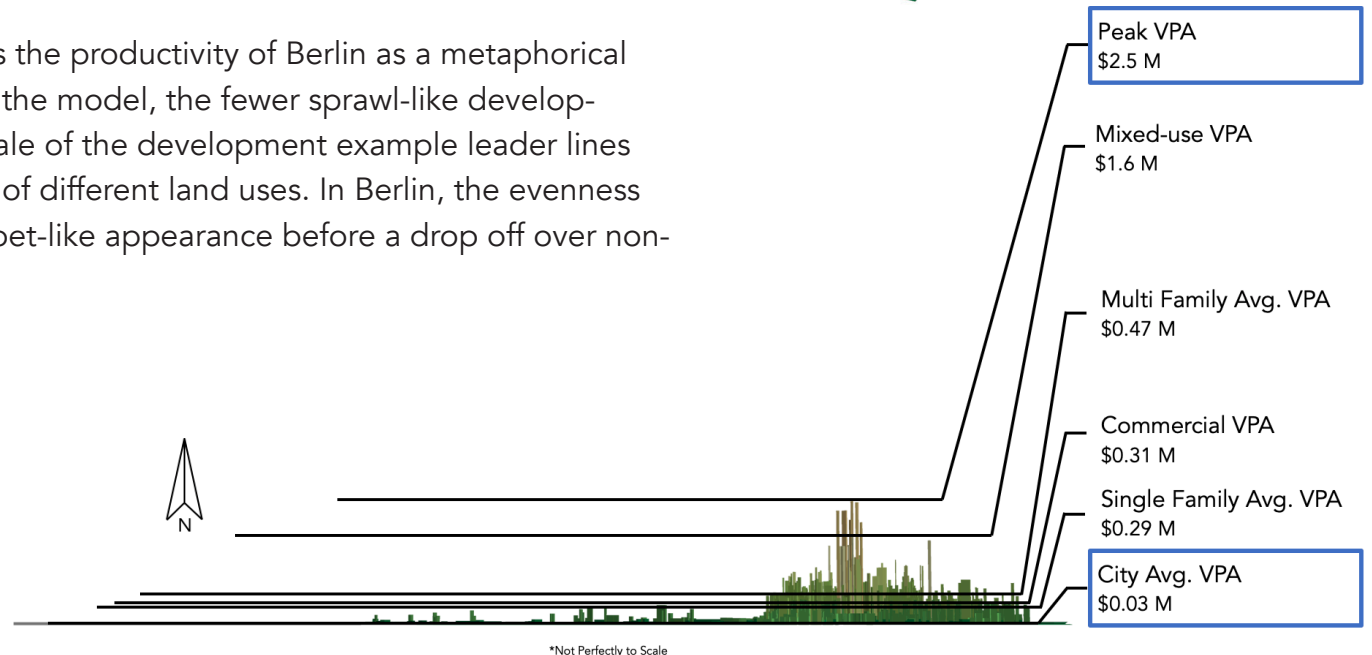




The map to the right highlights examples of typical buildings and developments in Berlin that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The typical mixed-use VPA is more than 5 times the average VPA of single-family properties. It's clear that adding incremental mixed-use projects to downtown would strengthen productivity.



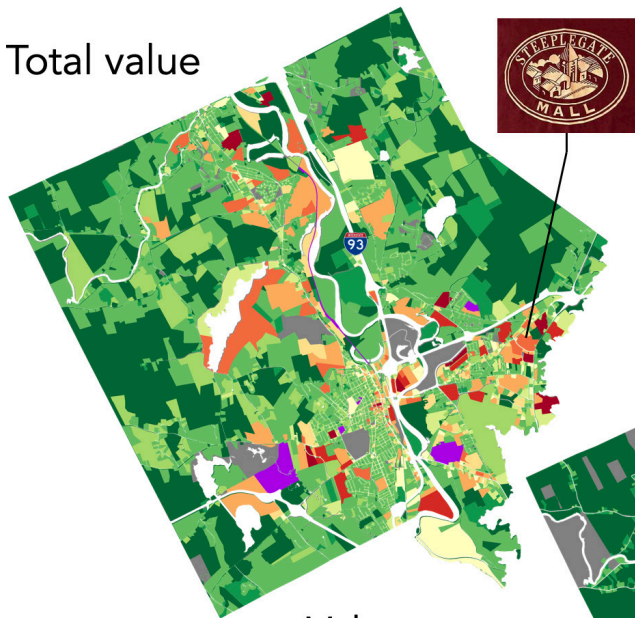
The diagram to the right demonstrates the productivity of Berlin as a metaphorical thermometer. The cooler and broader the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Berlin, the evenness of VPAs across land uses creates a carpet-like appearance before a drop off over non-taxable land.



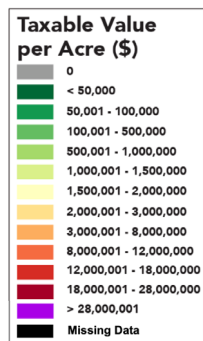
# CONCORD

The total value map for Concord shows a collection of larger commercial and industrial properties in the southeast in high-value orange and red. However, when mapped by value per acre, the small, highly productive properties along Main Street and downtown Concord become a concentration of warm high-value colors and the commercial parcels, like the Steeplegate Mall, fade to low-value shades of green.

Total value

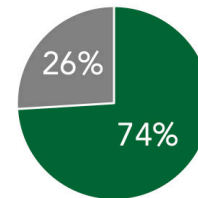


Value per acre

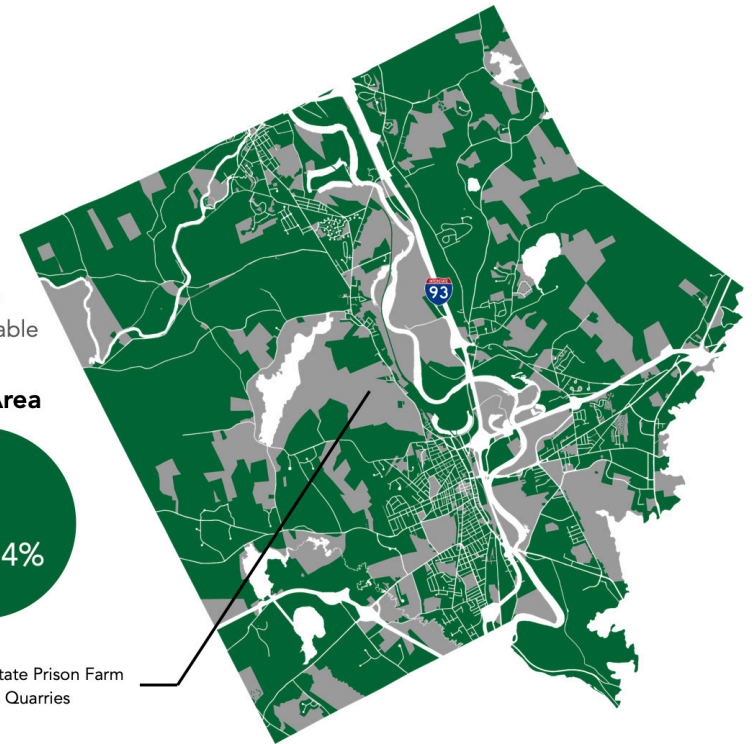


- Taxable
- Nontaxable

Total Area



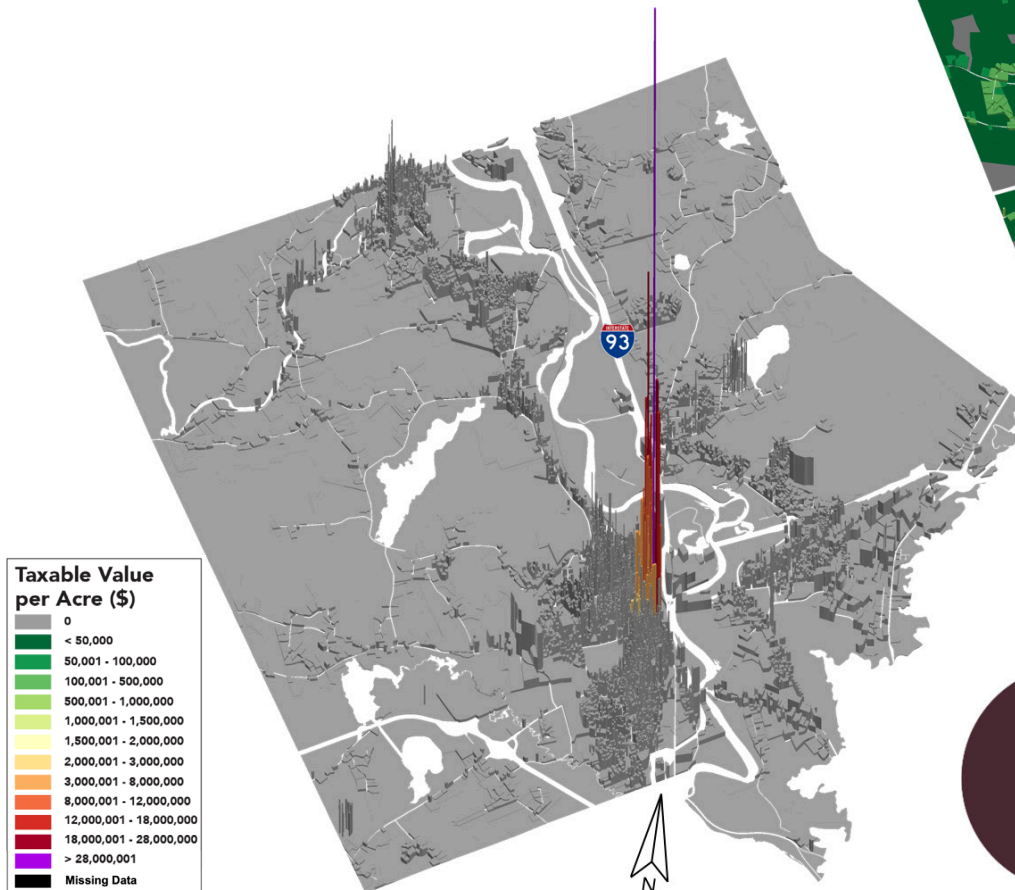
State Prison Farm + Quarries



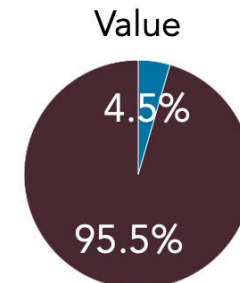
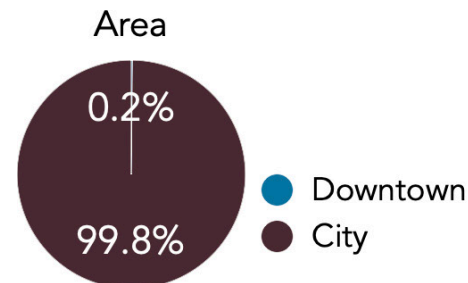
The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Concord. 74% of the land within Concord is taxable and 26% is nontaxable. The fact that Concord is the state capital and home to many government buildings might lead one to believe that the abundance of nontaxable land completely suppresses the productivity of Concord. However, the majority of these buildings are concentrated in one section of downtown, allowing commercial and mixed-use development to flourish and serve as destinations around a nontaxable island.



The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Concord uses 0.2% of Concord's land to generate 4.5% of Concord's value. This 1:30 ratio means that, relative to its size, downtown Concord is 30 times more productive than all of Concord. This ratio is well above the 1:6 ratio of healthy downtowns. The cluster of red and purple spikes in the 3D model indicates that while Concord has some sprawl and large big-box commercial corridors, the productivity of the downtown compensates for it by generating a tremendous amount of value. Concord could continue to add more mixed-use to the downtown and refrain from building far-flung single-family neighborhoods.

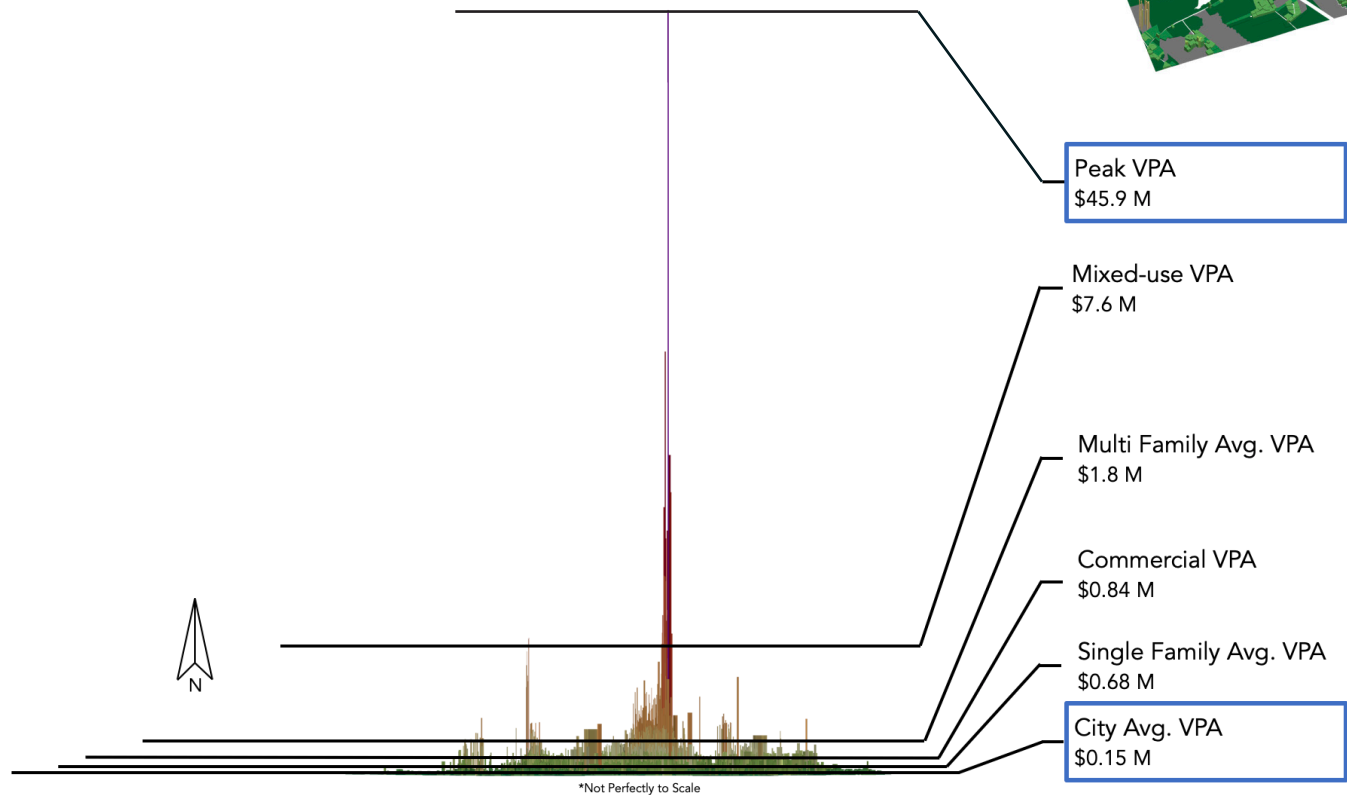
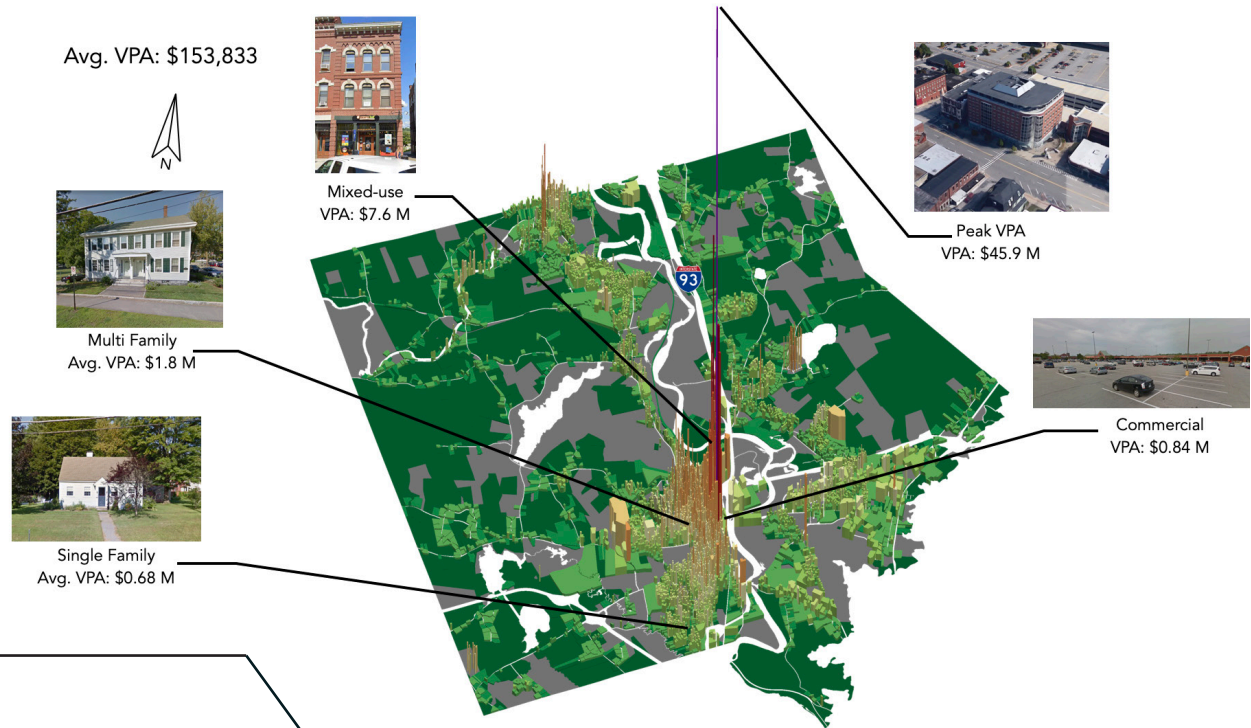


# 1:30





The map to the right highlights examples of typical buildings and developments in Concord that help us understand how patterns of land use choices affect value per acre. As buildings grow more valuable and use their land more intensely, they appear taller in the model. The impressive peak VPA is the Hotel Concord. While the hotel is new, large, and mixed-use, it's important to note that it is not solely responsible for Concord's high productivity. The abundance of mixed-use and multi-family properties provide a strong foundation.



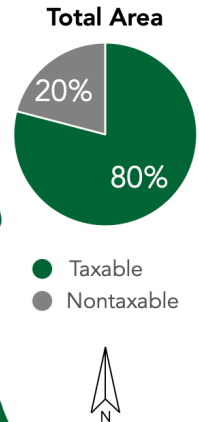
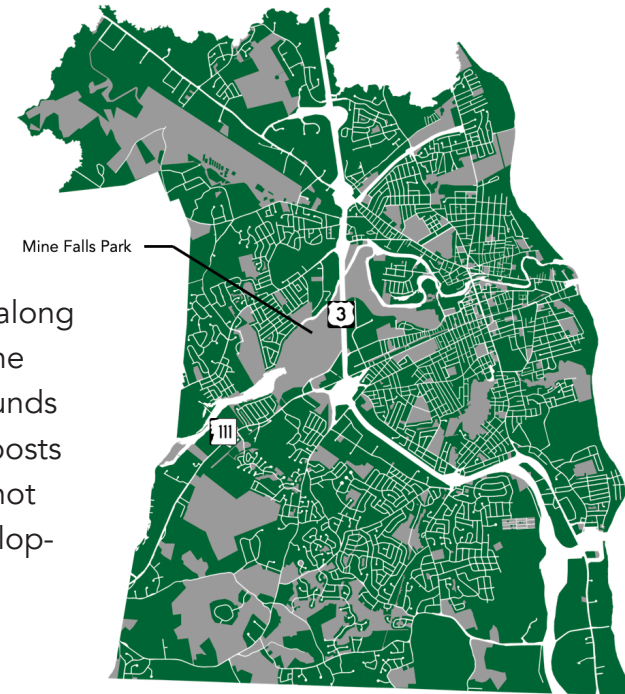
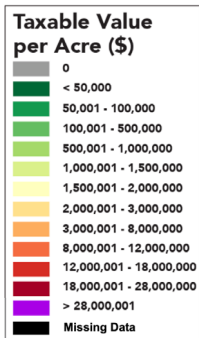
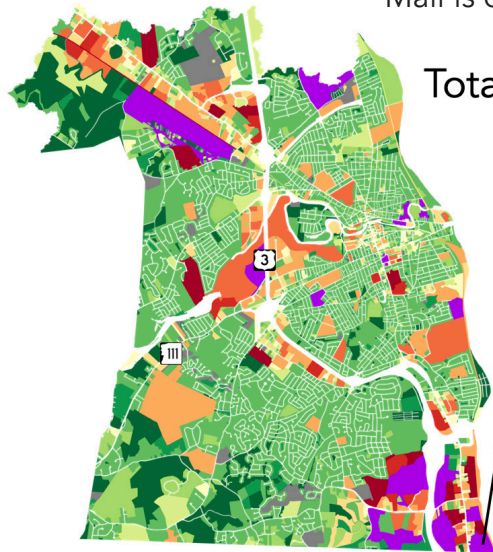
The diagram to the left demonstrates the productivity of Concord as a metaphorical thermometer. The hotter the model, the more amenities and less-productive development a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Concord, a typical mixed-use property VPA is 9 times the typical exclusively commercial property VPA.

# NASHUA

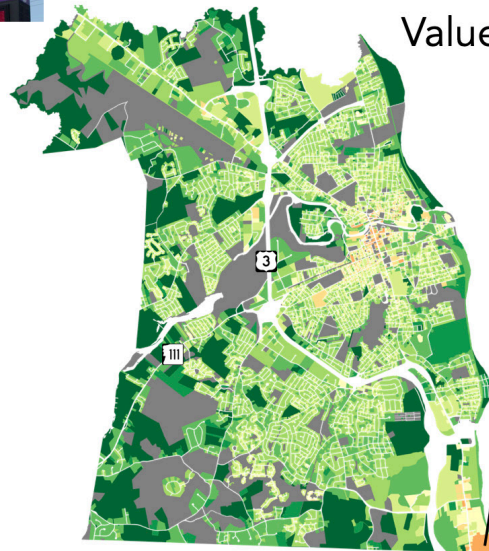
The total value map for Nashua shows a collection of substantial commercial properties, including Pheasant Lane Mall, in the southeast corner of the city in purple and red. However, when mapped per acre, the big-box stores and shopping centers turn green and yellow. Small, highly productive properties along Main Street become a concentration of warm high-value colors. Pheasant Lane

Mall is deceptively orange because its out-of-bounds parking lot in Massachusetts boosts the mall's productivity and is not replicable as a model of development.

Total value



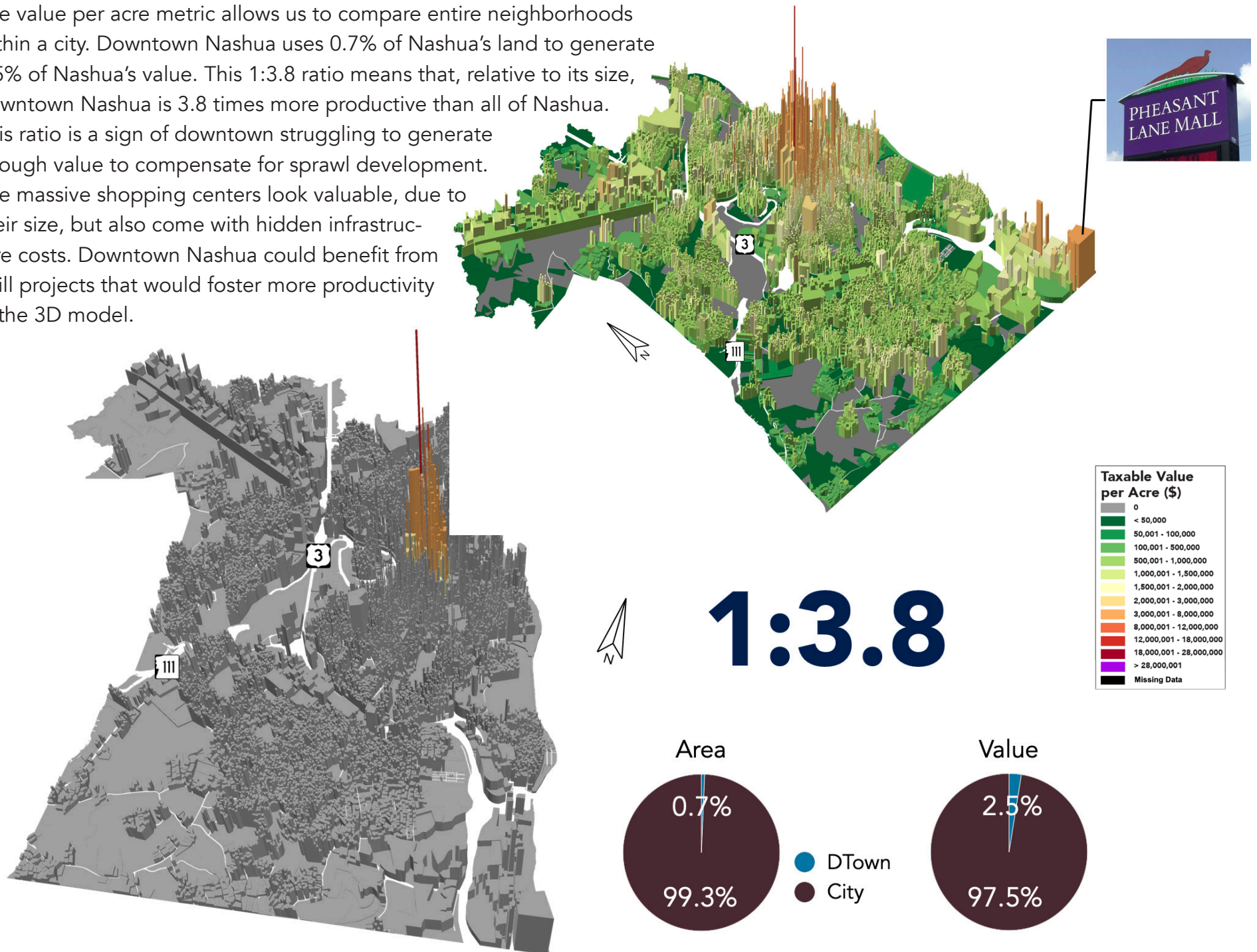
Value per acre



The map above shows the distribution of taxable land (green) and nontaxable land (gray) in Nashua. The balance of taxable and nontaxable land is important when considering the proportion of revenue-producing land to the tax-exempt land that uses city services without generating revenue. 80% of the land within Nashua is taxable and 20% is nontaxable. The land along the Nashua River represents a large portion of the nontaxable land.

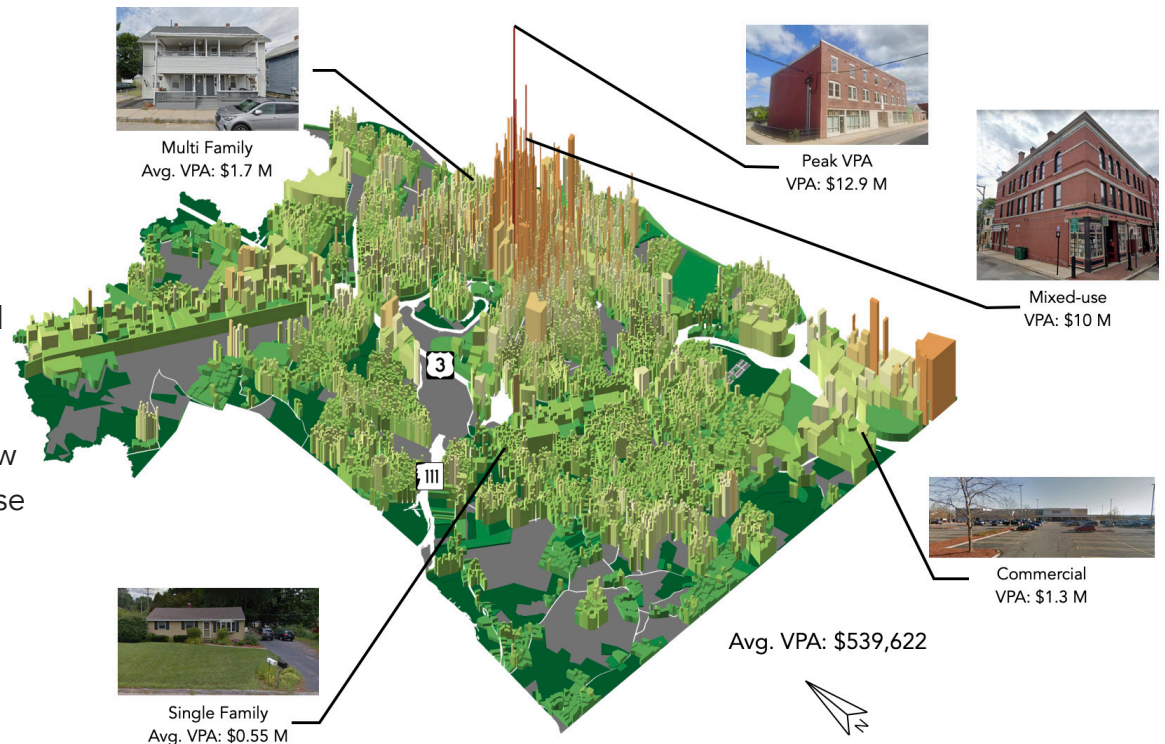


The value per acre metric allows us to compare entire neighborhoods within a city. Downtown Nashua uses 0.7% of Nashua's land to generate 2.5% of Nashua's value. This 1:3.8 ratio means that, relative to its size, downtown Nashua is 3.8 times more productive than all of Nashua. This ratio is a sign of downtown struggling to generate enough value to compensate for sprawl development. The massive shopping centers look valuable, due to their size, but also come with hidden infrastructure costs. Downtown Nashua could benefit from infill projects that would foster more productivity in the 3D model.

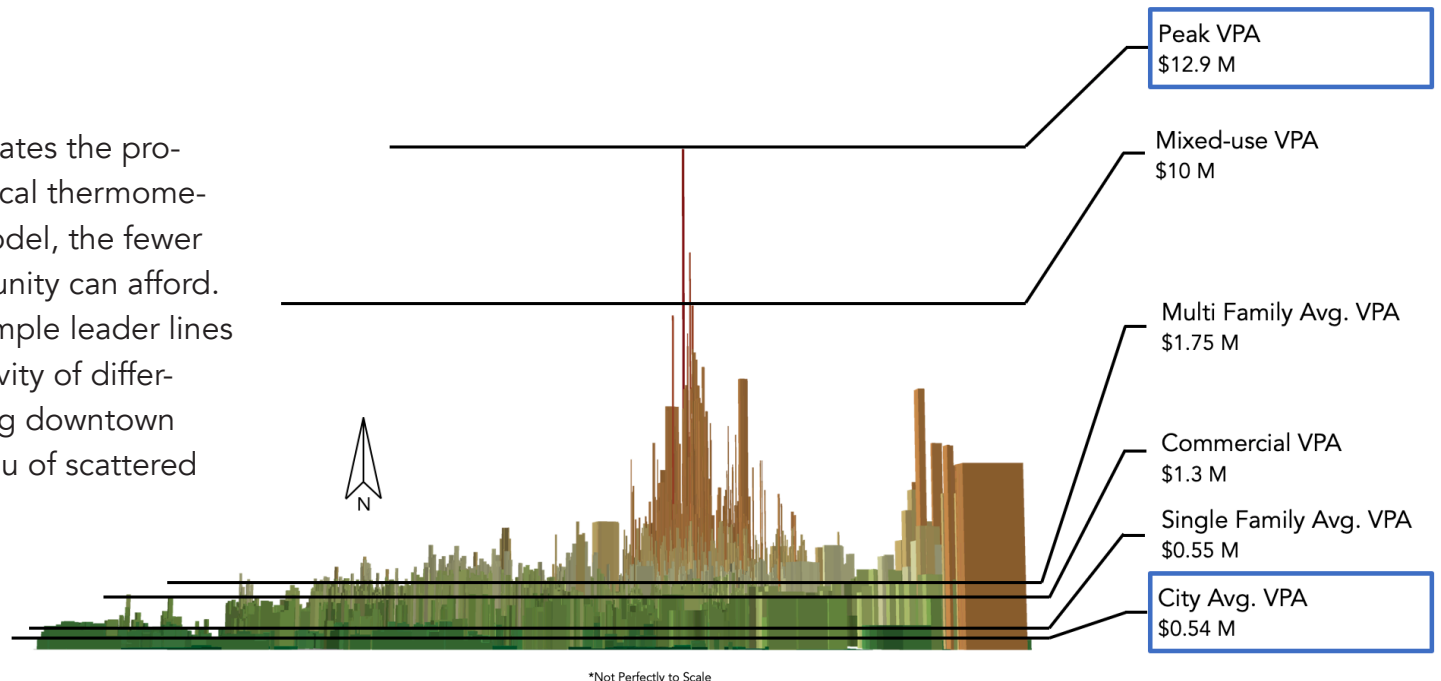




The map to the right highlights examples of typical buildings and developments in Nashua that help us understand how patterns of land use choices affect value per acre. Valuable buildings that use their land intensely appear taller in the model. The peak VPA is respectable at \$12.9 M, but the typical mixed-use VPA is not far behind at \$10 M. Adding just a few mixed-use buildings would provide a marked increase in productivity.



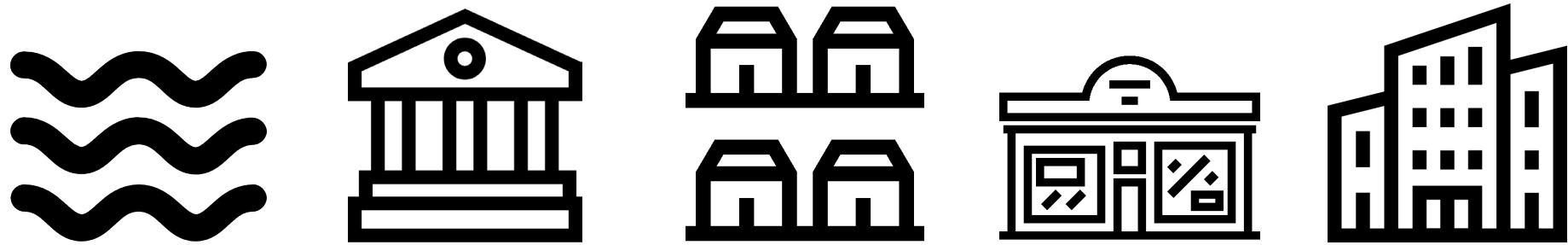
The diagram to the right demonstrates the productivity of Nashua as a metaphorical thermometer. The cooler and broader the model, the fewer sprawl-like developments a community can afford. The scale of the development example leader lines demonstrates the relative productivity of different land uses. In Nashua, the strong downtown struggles to compete with a plateau of scattered low-value green and yellow spikes.



# COMPARING CITIES

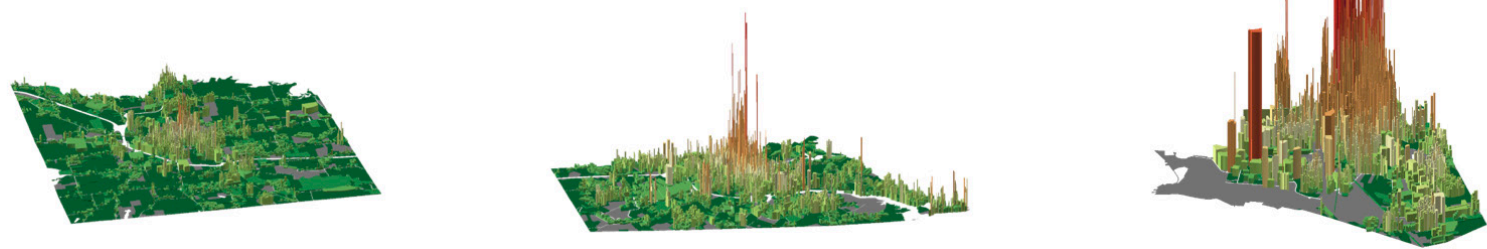
The NHHFA and Urban3 created a set of groupings in order to compare the selected cities. The qualities of each group are detailed below. These comparisons are not meant to rank communities and are not intended to be a direct values to values comparison, rather they are meant to highlight the vital stats of each community within contexts that are shared with other communities. Look at the shape of the model and how the distribution and height of spikes affect the peak and average values, sometimes in surprising ways.

Seacost	Academic Town	Potential Core Focus	Downtown Focus	Large Cities
Cities of similar population but different efficiency	Major academic institution	Populations over 14,000	Populations under 14,000	Populations over 40,000
Demonstrates land use intensity steps city to city	High value in node near institution	Much of the area is developed	Distinct places with individual character	All kinds of development
Connected region with three very different patterns and productivities	Potential to continue leveraging academic activity and create lasting value	Missing high efficiency peaks	A few peak parcels that need more support	Tapered models



# SEACOAST

The Seacoast group presents an impressive comparison of three unique urban forms present in one region. Portsmouth values are influenced by proximity to the ocean. However, when we compare Rochester, to Dover, to Portsmouth, the patterns of VPA amongst different land uses are increasingly compact and efficient, despite similarly sized populations. Both the peak and progress in a manner that is consistent with the differences in how each community was developed over time.

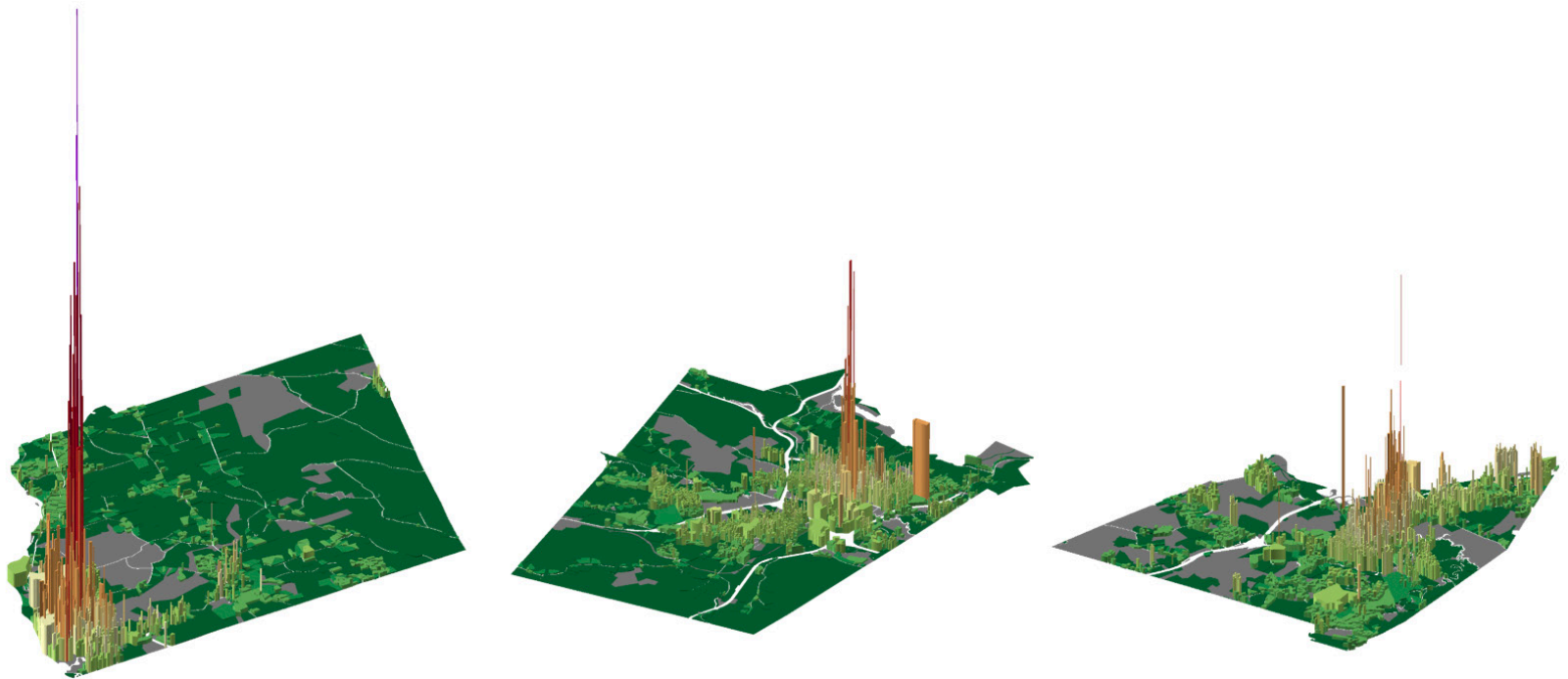


	Rochester	Dover	Portsmouth
Population	31,366	32,191	21,896
Avg. VPA	\$88,371	\$242,796	\$557,719
Peak VPA	\$5,203,925	\$15,316,240	\$51,157,466



# ACADEMIC TOWN

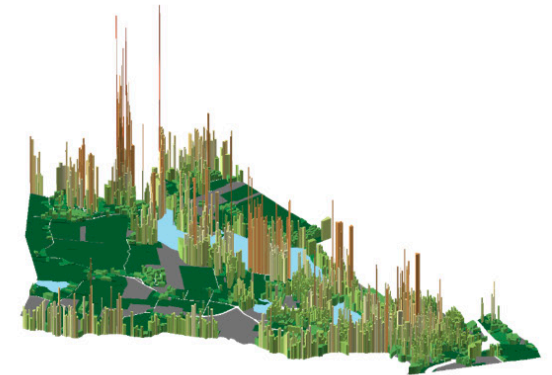
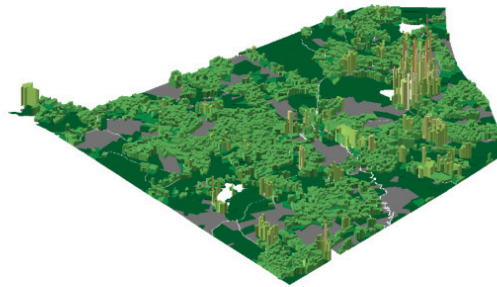
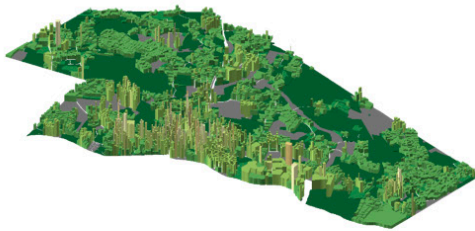
The communities in the academic grouping are all home to a major educational institution. While these institutions are nontaxable, they clearly attract activity. There are high value per acre properties adjacent to the schools. Although these cities have large nontaxable tracts, they benefit from their proximity to these institutions in the form of mixed-use and residential properties that cater to the students and staff.



	Hanover	Keene	Exeter
Population	11,500	23,056	14,306
Avg. VPA	\$100,083	\$103,944	\$197,142
Peak VPA	\$37,827,184	\$14,050,950	\$13,578,189

# POTENTIAL CORE FOCUS

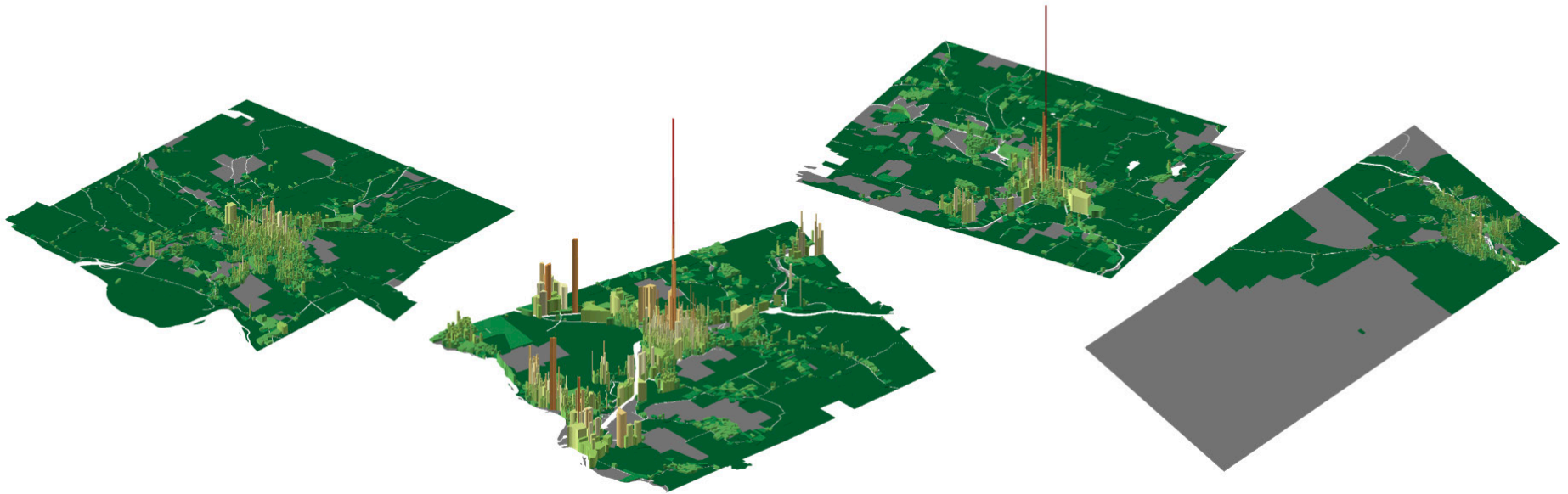
This peer group is strikingly built out, with very little undeveloped land in gray or dark green. However, with all of that development, a centralized core with high productivity remains to be seen. Despite their proximity to larger cities, this group has the opportunity to develop their own appropriately scaled downtown that would drive wealth creation which would provide revenue for infrastructure maintenance, and improve opportunities within the community.



	Hudson	Pelham	Laconia
Population	24,467	14,049	16,492
Avg. VPA	\$165,357	\$121,607	\$173,092
Peak VPA	\$2,690,571	\$3,610,967	\$10,897,320

# DOWNTOWN FOCUS

This grouping of communities have relatively similar population sizes and have a notable core with productive areas that branch out from the center. Compared to larger cities, these communities have smaller peak VPA properties and lack an abundance of mixed-use. However, the productivity around the peak is highly efficient. These towns would do well with infill projects that contribute to their existing cores without expanding infrastructure networks.

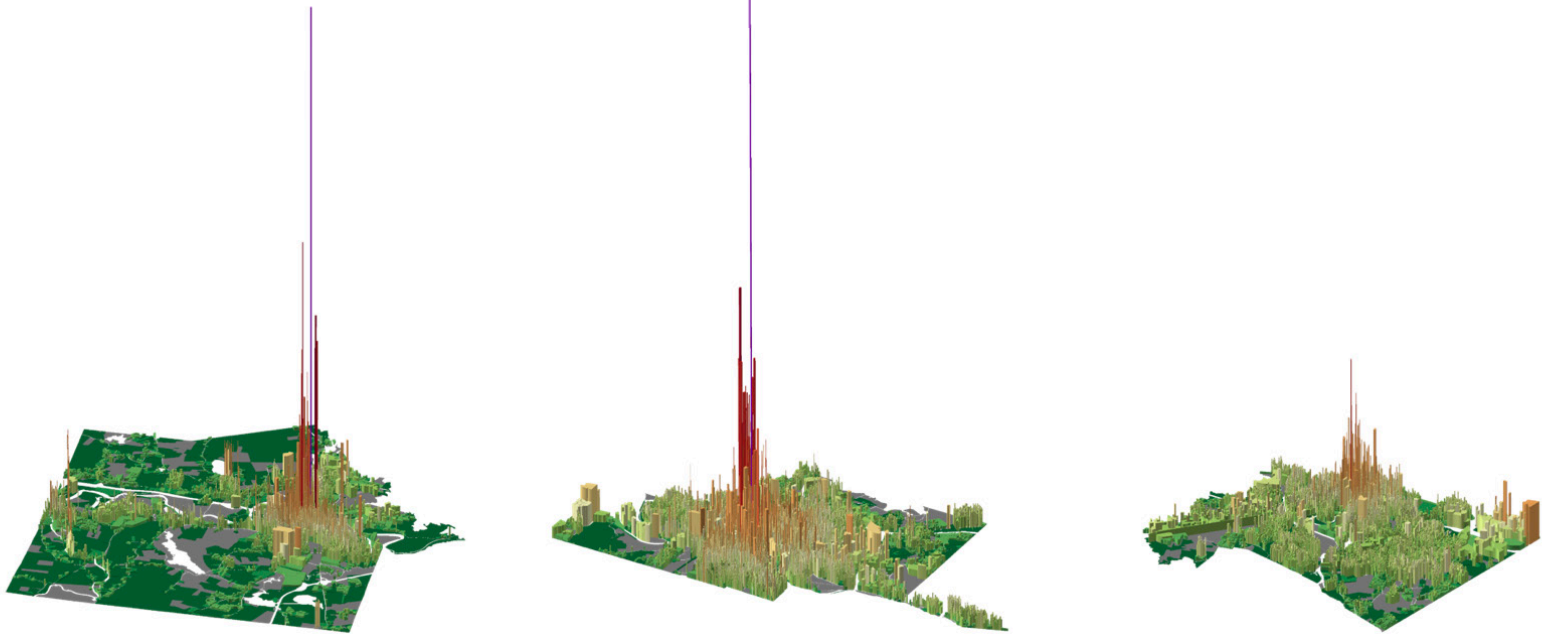


	Claremont	Lebanon	Peterborough	Berlin
<b>Population</b>	12,967	13,602	6,284	10,200
<b>Avg. VPA</b>	\$28,311	\$90,500	\$38,904	\$27,106
<b>Peak VPA</b>	\$2,6006,428	\$14,427,351	\$12,205,874	\$2,537,768



# LARGE CITIES

The larger cities peer group demonstrates the importance of city-wide development patterns. The spikes in shades of yellow prevalent in Nashua and Manchester, but not Concord, drive the city average value per acre higher. The elevated value per acre returns a larger revenue source that helps pay for recurrent infrastructure needs. Note that Nashua has a great deal of sprawl development in light green. The cost of sprawl puts a strain on the revenue generated

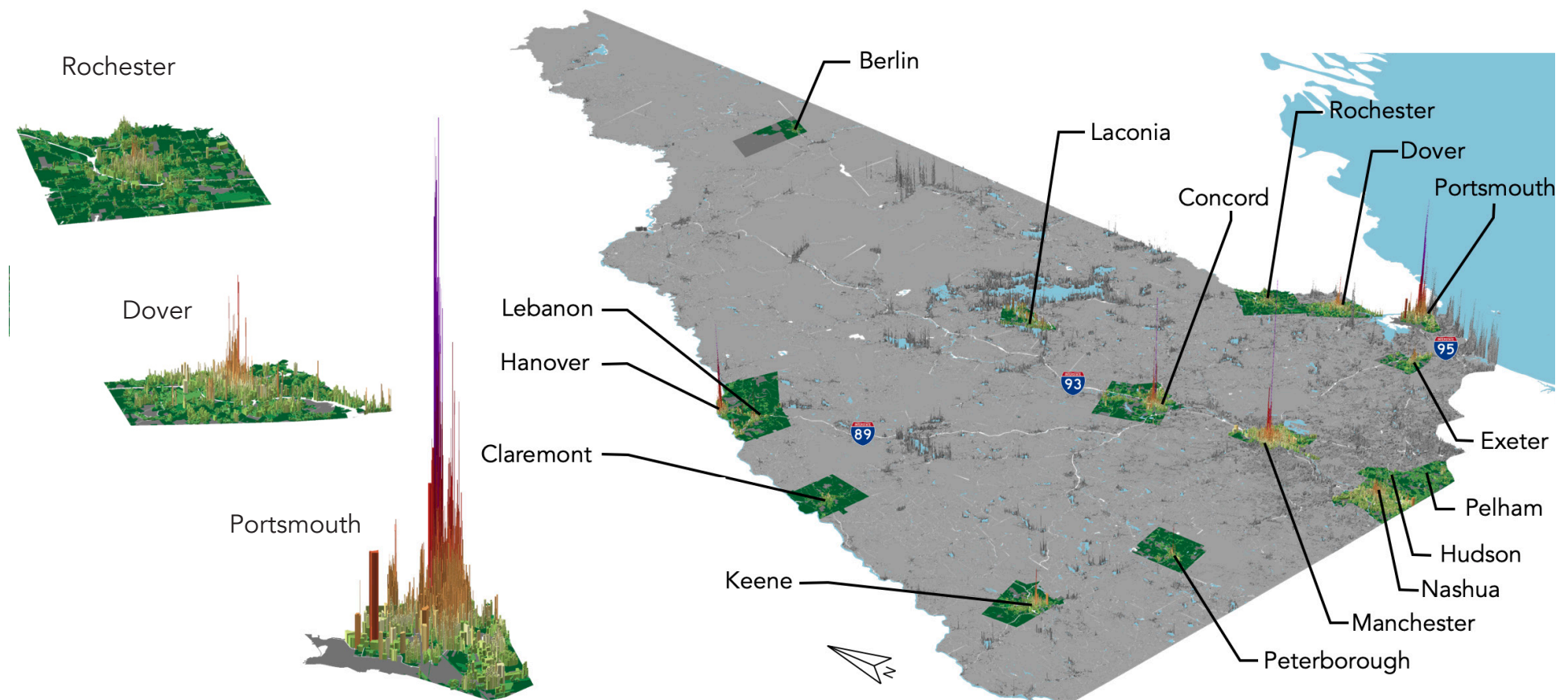


	Concord	Manchester	Nashua
<b>Population</b>	43,412	112,525	89,246
<b>Avg. VPA</b>	\$153,833	\$687,321	\$539,622
<b>Peak VPA</b>	\$45,923,043	\$67,720,654	\$12,915,100

# CONCLUSIONS

## LEARN FROM YOUR NEIGHBORS

New Hampshire is lucky to have a wide variety of urban development patterns that serve communities of all sizes. It's impractical for a small city like Berlin to try and build their wealth in the same style of Portsmouth. Different contexts require different approaches. Communities within the same comparison group can borrow ideas and strategies for new development from each other. The Seacoast group has three cities within the same region, but at different stages of build out. Rochester could look at Dover and learn how to build a stronger core around the peak with mixed-use development. Dover could look at Portsmouth and adopt a strategy that reduces surface parking lots and adds mixed-use with infill projects.



# CONCLUSIONS

## MAINTAIN / RECREATE HISTORIC VALUE

Although many cities in New Hampshire have experienced industrial decline and have had to change course to stimulate economic growth, this history of industry has left behind an abundance of attractive historic buildings of high-quality construction. Retrofitting existing buildings is the first step to preventing costly sprawl development and boosting productivity. Historic buildings are usually found in the downtown area and come in all shapes and sizes, perfect for a small shop with second-floor apartments, or a technology company headquarters and restaurant configuration. Preserving and repurposing these buildings not only builds wealth and protects infrastructure budgets, it also reinforces the authenticity and character of the community.



Multi-family  
VPA: \$1.9 M



Mixed-use  
VPA: \$9.6 M



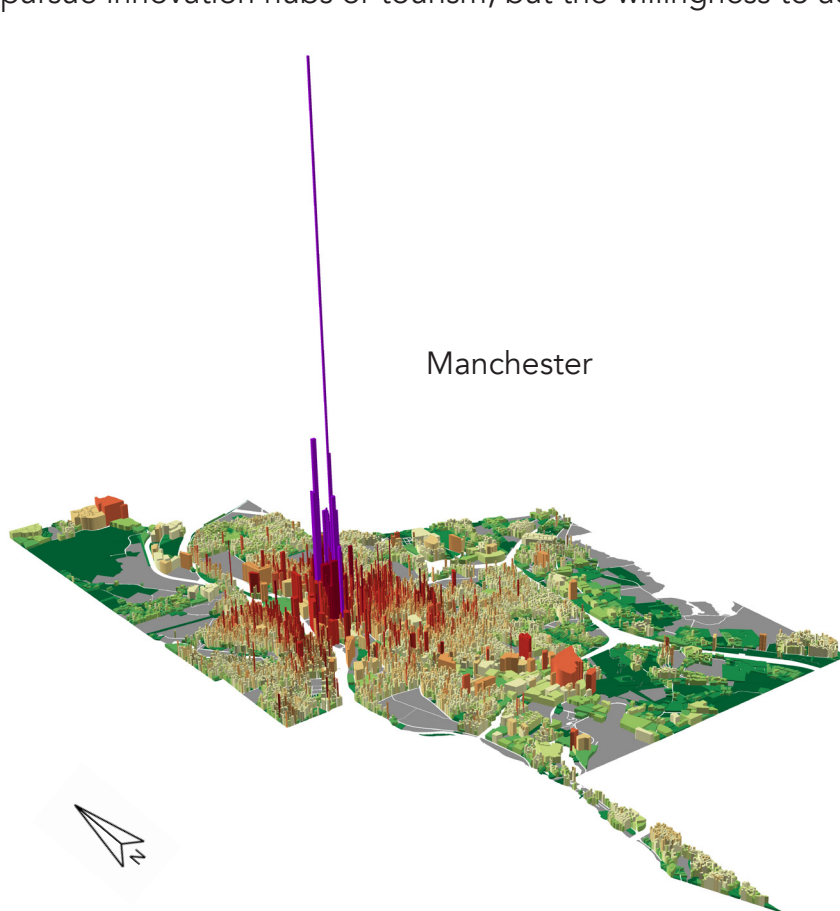
Peak VPA  
VPA: \$15.3 M



# CONCLUSIONS

## ADAPT

Cities across New Hampshire have weathered many changes over the years. The ability to adapt to changing economic conditions and repurposing existing assets determines the outlook of a community's fiscal health. Portsmouth did not escape the effects of deindustrialization and had a reputation as a run-down seaport by the 70s and 80s. However, over the last few decades Portsmouth has reinvented itself as a premier tourist destination with restaurants and shops throughout its walkable downtown. The rewards of Portsmouth's ability to adapt are seen in the tall purple and red spikes of productivity in the 3D model. A similar pattern played out in Manchester, which changed from a mill town to a factory town to an innovation hub. Not every community is going to be able to pursue innovation hubs or tourism, but the willingness to adapt has proved worthwhile.



Manchester



Portsmouth

# CONCLUSIONS

## LEADING PRODUCTIVITY

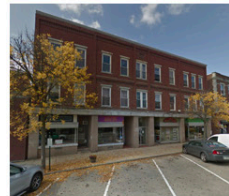
Across New Hampshire, multi-story buildings with significant capacity for residential use are consistently the most productive properties. These buildings provide opportunities that complete communities and take advantage of the historic human-scale village patterns found in most New Hampshire communities. Focusing on building density through mixed-use that includes multi-family housing is relevant to every community's value as a place as well as to its financial productivity.



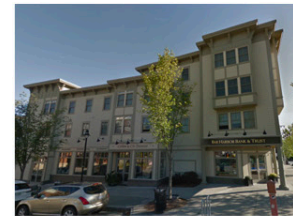
Keene  
Peak VPA  
VPA: \$14 M



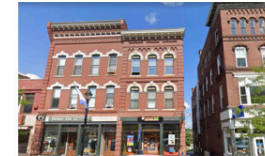
Lebanon  
Mixed-use  
VPA: \$6.2 M



Laconia  
Mixed-use  
VPA: \$3.7 M



Hanover  
Mixed-use  
VPA: \$12 M



Concord  
Mixed-use  
VPA: \$7.6 M



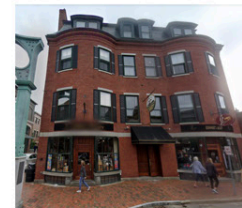
Claremont  
Multi-family  
VPA: \$0.6 M



Pelham  
Multi-family  
Avg. VPA: \$0.45 M



Hudson  
Multi-family  
Avg. VPA: \$1.8 M



Portsmouth  
Mixed-use  
VPA: \$29.3 M



Nashua  
Mixed-use  
VPA: \$10 M



Exeter  
Peak VPA  
VPA: \$13.5 M



Dover  
Mixed-use  
VPA: \$9.6 M



Berlin  
Peak VPA  
VPA: \$2.5 M



Peterborough  
Peak VPA  
VPA: \$12.2 M



Rochester  
Mixed-use  
VPA: \$3.9 M