

Town of Coventry

Build-Out Analysis and Cost of Community Services Study

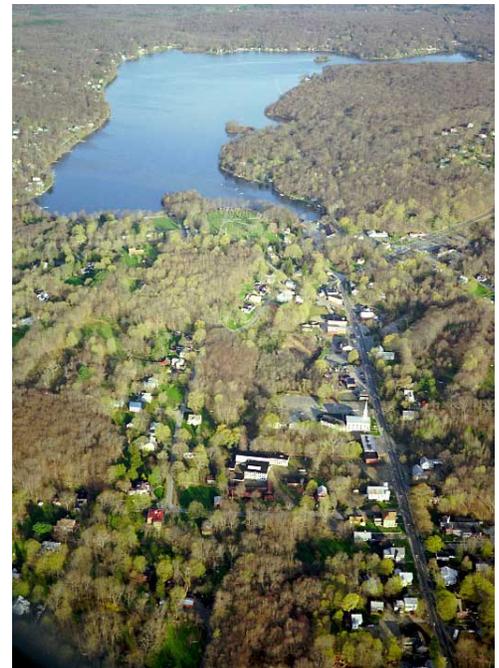
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A *Build-Out Analysis* is a valuable tool to help a community understand the impacts of development based on current land use regulations. Once a community understands these implications and has a clear vision for its future, it can determine if current regulations and planning strategies meet their needs or if alternatives should be investigated and additional steps taken to address their goals.

The Cost of Community Services Study is a tool used to demonstrate the cost to provide town services on a land use basis. The American Farm Land Trust developed the methodology 20 years ago, and it has been used across the country to evaluate the differences between revenue generated, and services required, by specific land uses.



A Coventry farm along the Willimantic River



Coventry Village

Aerial photos courtesy of GLSweetnam.com

BUILD-OUT

The Build-Out Analysis is based on current zoning regulations that stipulate site conditions prohibiting development (such as wetland soils or steep slopes) and minimum lot size or building envelope size. The analysis then calculates the maximum development possible in a community. A Build-Out Analysis isn't an attempt to forecast what will happen, but rather what is possible under current zoning regulations.

Process. The first step in determining how much can be built in a town is to determine what is potentially available for development. Meaning, a fully developed site cannot be developed further, nor can sites smaller than the regulated minimum lot size or others with wetland soils or steep slopes.

This step is made somewhat easier with computerized mapping, known as Geographic Information System (GIS) mapping. GIS links maps with a database similar to an Excel spreadsheet. Each specific point on the map is geo-rectified (precise latitude and longitude), as new information is layered on, each bit of data sits precisely in its proper geo-rectified location. With a mouse click you can see soil type, depth to bedrock, vegetation, zone, parcel data, etc. for a specific area. GIS is an excellent tool for town-wide planning, but site specific planning still requires detail field work, especially to determine soil types and wetland areas.

Parcel Information. Once a year the Town Assessor develops a Grand List of all the properties within the town along with an assessment, for tax purposes, of each property. The Coventry Assessor had developed a list for 10/1/07 and was in the process of verifying each assessment when we began the data gathering. A digitized GIS Coventry parcel map, dated 2005, was also utilized. By merging the Assessor data with the parcel map, a table listing all Coventry parcels, the owner, the use and the acreage was developed. Care was taken to remove from the GIS database any parcels that, based on the assessor's grand list and information from the Town Planner, had been subdivided and considered 'developed'; in all cases, when in doubt, the conservative approach was taken.

Table 1, to the right, summarizes Coventry's parcel data, based on the 10/1/07 Assessor's Grand List. Coventry is currently divided into 6,727 properties totaling over 23,000 acres.

Table 1

**Town of Coventry
Current Land Use Summary**

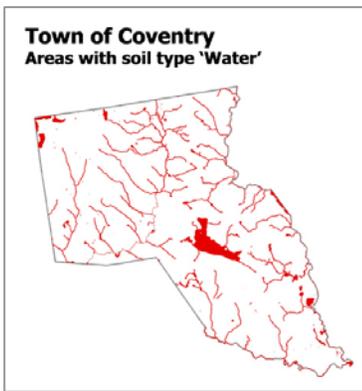
Category	Number of Lots	Acres	Avg Acres
Residential			
Condo	112	-	-
Less than or equal to 1 acre	2,335	1,285.89	0.55
Between 1 and 2 acres	1,127	1,567.40	1.39
Between 2 and 3 acres	418	1,015.21	2.43
Between 3 and 5 acres	302	1,182.98	3.92
Between 5 and 20 acres	334	2,959.38	8.86
Greater than 20 acres	92	4,507.94	49.00
	<u>4,720</u>	<u>12,518.80</u>	
Commercial, Industrial and Public Utility			
Less than or equal to 3 acres	51	60.04	1.18
Between 3 and 5 acres	3	11.85	3.95
Between 5 and 10 acres	2	19.56	9.78
Greater than 10 acres	5	353.16	70.63
Industrial	9	42.05	4.67
Public Utility	29	111.04	3.83
	<u>99</u>	<u>598</u>	
State/Municipal/Institution			
CT/Coventry less than 1 acre	197	54.28	0.28
CT/Coventry more than 1 acre	190	2,572.46	13.54
Quaisi Government	15	53.38	3.56
Almada Lodge	11	355.91	32.36
Trust	4	35.63	8.91
Church/Cemetery	16	141.49	8.84
	<u>433</u>	<u>3,213.15</u>	
Vacant Land			
Less than 1 acre	1,017	222.98	0.22
Between 1 and 2 acres	110	155.29	1.41
Greater than 2 acres	348	6,538.08	18.79
	<u>1,475</u>	<u>6,916.35</u>	
	<u><u>6,727</u></u>	<u><u>23,246.00</u></u>	

Source: 10/1/07 Coventry Grand List

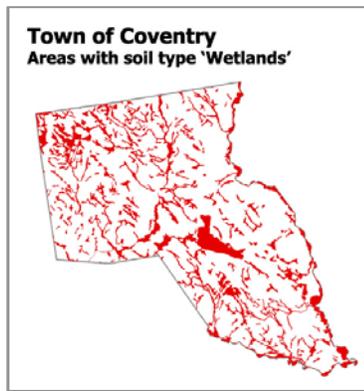
According to GIS calculations, the total area within the town borders is 24,505 acres. This calculation is determined by spatial analysis of the GIS Town Boundary data layer. The variance between the Grand List totals and the GIS totals was researched; the primary difference is because the Assessor’s Grand List does not include Coventry Lake, nor streets and roads.

Site Limitations. The next step was to look at site limitation based on current zoning and wetlands regulations that place restrictions for development. In Coventry, building is not permitted on wetland soils, flood plain soils, within a 100-year flood plain, or slopes greater than 20%; and Inland Wetland regulations required that any activity within 75’ area of wetland soils, or 150’ from an important river or waterbody, be reviewed.

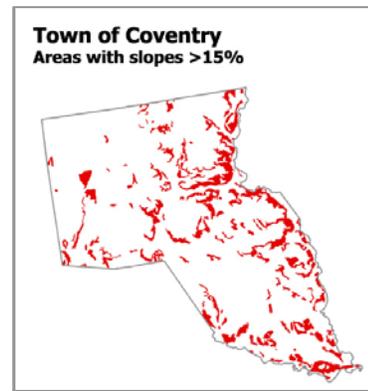
By analyzing Coventry’s GIS information, the potential site limitations for development can be determined. The USGS Soil Survey data defines soils by various categories including water, hydric or wetland soils, and also by the amount of slope. You can’t build in water; Map A shows the amount and locations of soils classed as water. Regulations stipulate that you cannot build in wetland soils, or areas with flood plain soils; the USGS Soil Survey refers to these as Hydric Soils and they are shown in Map B. The USGS Soil Survey does not classify slope at 20%, so slopes greater than 15% were used as depicted in Map C, the actual limited areas are less than shown.



Map A: Water

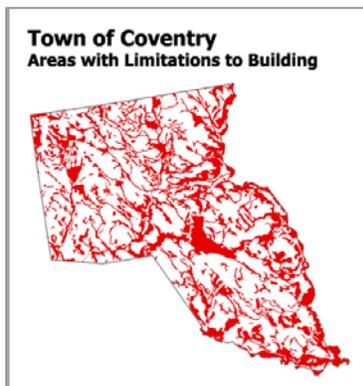


Map B: Hydric Soils



Map C: Slopes > 15%

The result of this analysis is summarized in Map D and also Table 2. 37.5% of the land in Coventry has some site limitations for development, additionally 12.2% is within the wetland review area. Much of Coventry was developed long before these regulations were in place, so some of these ‘unbuildable’ areas have actually been built upon.



Map D: Summary of all Site Limitations

Total Acres per GIS	24,505
Coventry Lake	374
Streets and Roads ROWs	791
	1,165
	Net 23,340
Town-wide Site limitation (in acres):	
Slopes > 15%	3,194
Ponds, Streams and Rivers	1,246
Wetlands	4,304
	8,744
	average site limitations town-wide 37.5%
Buffer on Wetlands, Rivers.	2,838
	average additional limitations 12.2%

Source: GIS soil data layer by classification from GVI 2/08

Potential for Development. The next step was to determine the parcels that have potential to be developed based on the existing land use. Clearly, vacant parcels over 2 acres, without conservation easements or other protection, have the potential to be developed. Also, some developed parcels are not fully developed and conceivably could be subdivided in the future. For this analysis, a single family home on a parcel larger than 5 acres was considered to have excess land that could also be subdivided and later developed. The State of Connecticut and the Town of Coventry combined have ownership of over 2,500 acres of the land, for this analysis those lands were considered not available for further development. Table 3 summarizes the land, by category, which for this study was considered potentially developable for residential purposes.

**Table 3
Town of Coventry
Current Parcels with Potential for Development
(based on Use and Size)**

	Number of Lots	Total Acres
Residential Use (between 5 and 20 acres)	334	2,959
Residential Use (greater than 20 acres)	92	4,508
Vacant Parcels (greater than 2 acres)	348	6,538
Total	774	14,005

Source: Synthesis of Table 1

Build-out Calculation. The process of calculating a mathematical build-out includes setting aside land for any existing use, reducing available land by Coventry’s average site limitations (49.6% including wetland review), then subtracting land (15%) for infrastructure that would be needed to accommodate future growth such as roads and new municipal buildings and parks. If future lot size averaged 4.5 acres (2.2 acres without site limitations), an additional 2,329 homes could be built in Coventry, a 49% increase in the number of residences. If the future average lot size were 3.0 acres (1.5 acres without site limitations) the number of additional homes would increase to 3,417 homes, a 72% increase. Table 4 summarizes the build-out analysis. Because the GIS data was also available, the buildout was calculated on a parcel level for comparison; those results were within a 3.9% variance.

In each of the previous two decades, Coventry’s population has increased 13% and 14%. With the housing pressures facing Eastern Connecticut in the future, a 10% growth rate per decade is likely, if so, build-out could be reached as soon as 42 years from now, only 30 years if the growth rate is 15%.

**Table 4
Town of Coventry
Buildout Calculations**

	Lots	Tot Ac.	Avg. Acre	Ac. Set Aside for Ex Use	Avg. Acre	Reduced by Avg Limitations	Less 15% for Future Infrast.	Net Available Acres	If 3 acre with 1.5 acres buildable	If 4.5 acre with 2.2 acres buildable
Residential Use: 5 to 20 ac	334	2,959	8.9	5.0	3.9	2.0	1.7	567.8	379	258
Residential Use: > 20 acres	92	4,508	49.0	5.0	44.0	22.2	18.9	1738.8	1,159	790
Vacant Parcels > 2 acres	348	6,538	18.8		18.8	9.5	8.1	2818.8	1,879	1,281
	774	14,005								
								Additional households projected	3,417	2,329
								Current Residences (Table 1)	4,720	4,720
									72%	49%
								Projected population	21,582	18,696

COST OF COMMUNITY SERVICES STUDY (COCS)

The Green Valley Institute conducted a COCS study for Coventry based on the 2008 FY budget. Budget documents, bonding structure and financial statements were analyzed, and each budget revenue and expenditure was allocated to one of three land use categories: Residential, Commercial/ Industrial or Open Space/Farm/Vacant.

The residential category includes all town revenues and town expenditures associated with single- and multi-family residences, apartment buildings, farmhouses, and rental units and the people that inhabit them. Town revenues and expenditures associated with businesses, manufacturers or retailers are allocated to the commercial and industrial category. The open space/farm/vacant category includes all town revenues and town expenditures associated with all undeveloped lands, agriculture lands, forests, and excess residential land (based on Town Assessor data).

For the fiscal year ending June 30, 2008, the study showed that tax revenues from residential properties are not sufficient to support the cost of services provided to them; for each dollar paid in town taxes \$1.06 was used in services. The other two land use categories each paid more in taxes than were used in services.

Although counterintuitive, development over time may not bring lower taxes. There is an immediate increase in tax revenue, but gradually the demand for increased services, and the need to upgrade infrastructure increases expenditures to an amount that exceeds the increased revenue, and the mill rate must be increased. Even new commercial and industrial development can cause an increase in residential development, require additional infrastructure, increase traffic, and have other impacts that can contribute to an increased cost of services.

Coventry Cost of Community Services Study			
The dollar cost of services for every dollar paid in local taxes			
	Residential	Commercial Industrial	Open Space Farm/Vacant
Coventry 2007-08	1.06	.25	.25

Table 1. Cost of Community Services Study shows the amount of services provided to each land use category for every \$1.00 paid in local taxes. These results indicate that as land use shifts from undeveloped to residential use, the demand for services increases. This increased demand will result in an increased mill rate.

Other Connecticut COCS Studies			
The dollar cost of services for every dollar paid in local taxes			
	Residential	Commercial Industrial	Open Space Farm/Vacant
Bolton (1)	1.05	.23	.50
Brooklyn (3)	1.09	.17	.30
Durham (2)	1.07	.27	.23
Farmington (2)	1.33	.32	.31
Lebanon (4)	1.12	.16	.17
Litchfield (2)	1.11	.34	.34
Pomfret (2)	1.06	.27	.86
Windham (3)	1.15	.24	.19

(1) Geisler 1998; (2) SoNE Forest Consort 1995; (3) GVI 2002
(4) GVI 2007

Table 2. Cost of Community Services Studies for other Connecticut towns parallels the Coventry results and shows that the more developed towns have increased demand for services from residential properties.

FUTURE FISCAL IMPACT: A 20-YEAR PROJECTION

Any land use changes, will have a fiscal impact in the future. Developing a parcel removes it from a vacant status to 'developed' and increases the Grand List for tax assessments. Because this developed parcel now has a greater demand for town services, town expenses will also increase. For example, if a large parcel were to become a factory employing 50 people with many truck deliveries, perhaps the town would have an added expense of upgrading and maintaining nearby town roads. Many future expenses are incremental – one more house won't mean the need for an addition to the elementary school, but perhaps 50 or 100 more houses would increase the student population enough that an expansion would be necessary.

Assumptions. Projections are based on assumptions. The assumptions that were used for this study are based on information received from Coventry and other fiscal forecasting studies.

To isolate the effect of change in land use from the effect of inflation and other budget increases, the following assumptions were made for the calculations:

- State aid to Coventry would remain the same
- State reimbursement rate (%) for education would remain the same
- Coventry's mill rate was fixed at 27.59, the current rate
- There would be 0 % inflation
- All town salaries would remain the same
- All 2008 debt would be paid within 20 years

Assuming a 10% per decade population growth, in 20 years:

- Revenue from town services and fees would increase at the rate of growth
- Taxes would increase by the growth in the grand list from the shift from vacant to developed
- Certain expenses would increase at the rate of growth (i.e. library, public works)
- Certain expenses would increase at less than the rate of growth because population increase would have limited affect (i.e. legal counsel, elections)
- Certain expenses would increase at a higher rate than the rate of growth because population increase would have a greater affect (i.e. public safety may require addition of one more officer, or additional fire safety personnel and equipment may be needed)
- Bonding for municipal non-educational projects would total \$25 million during those 20 years.

Assumptions made regarding Coventry education system

- Primary and Intermediate Schools will reach capacity in less than 20 years
- High School and Middle School have capacity for 20 year's growth
- School population would increase at a rate of 1.2 per new households for 13 of the 20 years, and at the current town average for the other 7 years.

Projections. If Coventry were to grow at 10% per decade, in 2028 (20 years from today) land use could shift with 2,917 acres removed from vacant land and developed into 939 homes and 10 new businesses. This could result in an increase in the grand list of over \$133 million and bring in \$4.1 million in additional local taxes at today's mill rate. However, even with conservative estimates, the demand for services for an increased population and additional school children would cost an additional \$6.7 million in expenditures, and create a short fall of \$2.8 million, a 3.31 mill rate increase (12%), would be needed to balance the budget. This increase is only due to the services needed for the additional population as inflation and other variables were excluded from the study.