Haystack Crossing – Density Calculations

Residential base density (section 3.6.2)	3 units / acre
Area/Acreage	33.228 acres
Total Base Density	**99.68 Units**
10% Inclusionary Zoning (20% Density Bonus)	+19.94 Units
Density Bonus - Incentive 1 (50% Density Bonus)	+49.84 Units
Density Bonus - Incentive 2 (25% Density Bonus)	+24.92 Units
Density Bonus - Incentive 3 (25% Density Bonus)	+24.92 Units
Total Allowable Density	**219 Units**

Density Bonus

As encouraged by the Hinesburg Zoning Regulation, the full build-out of Haystack Crossing proposes to utilize the maximum allowable density bonuses or 120% of the base density, as represented on the master plan. The size of the development triggers inclusionary zoning, which requires 10% of the base density be provided as affordable housing units, which will result in an initial 20% density bonus. The remaining 100% bonus is earned through the Village Growth Area Density Bonus / Incentive Options, Section 2.9. and/or by providing additional affordable housing beyond the required 10%.

PHASE I

Phase I proposes a total of 130 residential units, or 31 units above the allowable base density. To achieve the required density bonus, the applicant will provide a minimum of **20 affordable housing units** or 20% of the base density, which allows a 40% density bonus or a total of 139 units (see table 2 below).

FULL BUILD-OUT

For the full build-out, the Project will utilize two incentive bonuses as well as provide additional affordable units. To meet these requirements, Phase I will incorporate elements to meet these incentives. For the full build-out, the project will obtain two incentive bonuses through:

- Dwelling Unit Size;
- Renewable Energy;

And the remaining density bonuses will be acquired by providing additional affordable housing. Below is an overview of the planned approach to obtain the necessary density bonuses.

(1) Dwelling Unit Size

To obtain 1 density credit based on dwelling size, between 50 to 74% of all dwelling units need to be no larger than:

(a) Single family units 1,500 sf

(b) 2-family & multi-family units 1,200 sf

A minimum of 110 units of 219 total units that meet this criterion are necessary to receive 1 Bonus Incentive

(2) Renewable Energy

For the second density incentive, the applicant will provide renewable energy to meet at least **25%** of the overall energy needs for the residential units. The following chart provides a preliminary analysis of the overall energy usage for the residential component of the project, and the amount of solar generation that would be necessary to provide 25%, 50%, or 75% of the total demand. To supply even 25% of the overall energy consumption would require the use of cold climate heat pumps for a portion of the residential units.

TABLE 1 – RENEWABLE ENERGY CALCULATIONS

Single-Family Residential*				
Electric (no hot water / heat)	538	kWh / mo.	6,456	kWh / yr.
Natural Gas (heat & hot water)			900	cCF
Natural Gas Conversion to kWh Equivalent			26,370	kWh / yr.
Average Energy Use per SFD Units			32,826	kWh / yr.
Number of SFD Units			84	units
Total SFD Energy Usage			**2,757,384**	**kWh / yr.**
Multi-Family Residential				
General Electric Usage (no heat or hot water)	350	kWh / mo.	4,200	kWh / yr.
Cold Climate Heat Pump	650	kWh / mo.	7,800	kWh / yr.
Electric Hot Water	200	kWh / mo.	2,400	kWh / yr.
Average Energy Use per Multi-Family Unit			14,400	kWh / yr.
Number of Multifamily Units (Including HC I)			135	Units
Total Multi-Family Energy Use			**1,944,000**	**kWh / yr.**
Total Residential Energy Use			**4,701.384**	**kWh / yr.**
Average Energy Generation per KW of Solar			1,150	kWh / yr.
Solar Required for 25% of all residential energy use			**1,022**	**kW**
Solar Required for 50% of all residential energy use			**2,044**	**kW**
Solar Required for 75% of all residential energy use			**3,066**	**kW**

*for the purposes of this calculation, 24 larger town house units are considered within the calculations of single-family units.

To provide the necessary solar electric energy generation, several options are being considered that will include a combination of roof-top mounted solar within the project, ground mounted solar within the project property, and may include off-site solar, which would be net-metered to the project.

(3) Affordable Housing Bonus

The proposed development is required to provide 10% of the total unit count as affordable, defined in the Hinesburg Zoning Regulation Section 5.21. This will provide an initial 20% density bonus or 9.18 units. However, the development can provide additional affordable housing units to create additional density bonuses; up to 100%. The table below provides a breakdown of affordable residential units and the corresponding bonus units.

TABLE 2 – AFFORDABLE HOUSING DENSITY BONUS CALCULATIONS

% of Affordable Units	Number of affordable units	Bonus (beyond allowed base density; rounded to the nearest whole number of units)	Number of bonus units
10% (req. min.)	9.97 Units	20%	20 Units
20%	**19.94 Units**	**40%**	**40 Units**
30%	**29.91 Units**	**50%**	**50 Units**
40%	39.87 Units	60%	60 Units
50%	49.84 Units	70%	70 Units
60%	59.81 Units	80%	80 Units
70%	69.78 Units	90%	90 Units
75%+	74.76 Units	100%	100 Units

Haystack Crossing proposes to provide a minimum of **30 affordable dwelling units**, or 30% of base density for the full build-out which will involve a combination of affordable rental units and permanently affordable for sale units. As previously noted, Phase I will incorporate 20 of the total affordable dwelling units.