



**Build Out Analysis and
3D Visualization of
Gateway District Parcel
Richmond, VT**

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Introduction

This document describes the assumptions and methodology Chittenden County Regional Planning Commission (CCRPC) used to prepare a build out analysis for the Willis parcel in the Gateway District in the Town of Richmond.

This build out analysis is intended to depict the development potential of the Willis property under current zoning vs. proposed zoning. The assumptions in this report were developed in consultation with the Richmond Town Planner and the property owner. The build out analysis reports the number of additional dwelling units and commercial floor area (in square feet) given existing development, density assumptions for each zoning scenario, and environmental constraints. CCRPC utilized CommunityViz Scenario 360 to develop the build out results.

The five basic steps of the build out analysis are:

1. Develop a Base Map
2. Identify Existing Development
3. Determine Density Rules
4. Identify Environmental Constraints
5. Calculate Additional Development Potential

Base Map

The Base Map was developed to maintain consistency between multiple build out scenarios. The Base Map was derived from Richmond's 2008 parcel data.

Existing Development

Existing Development was identified from CCRPC's Housing Point database and Commercial Industrial database. Table 2-0 describes the existing development quantities considered in this analysis.

Density Rules

The Density Rules were determined from the Richmond Zoning Regulations last amended on February 22, 2010. Density Rules indicate the number of buildings per unit area. For residential use, density is provided in dwelling units per area or minimum lot size per area. For non-residential use, density is provided in maximum floor area or by using a floor area ratio. The Willis property can be developed as mixed use according to the zoning regulations. **As a result, both a residential and non-residential density is specified. To divide the property according to uses, the percent of residential area and non-residential area must also be specified.** To account for density lost due to roads, open space, and parking, an efficiency factor is applied to the build out calculation. Typically the efficiency factor reflects the lot coverage or building coverage.

Two Scenarios were developed to quantify the development potential for the current zoning and for the proposed zoning. Table 1-0 summarizes the inputs for each scenario.

**Table 1-0
Density Rules**

SCENARIO	RESIDENTIAL DENSITY	MIN LOT SIZE acres	NON-RESIDENTIAL DENSITY	RESIDENTIAL	NON-RESIDENTIAL	EFFICIENCY FACTOR
Current Zoning Regulation	6 du per acre	.33	10,000 sq. ft. building	98%	2%	75%
Proposed Zoning Regulation	3 du per acre	1	1 FAR	98%	2%	75%

Environmental Constraints

Environmental constraints were determined by the presence of wetlands, surface waters and associated 50 foot buffer, and steep slopes greater than 20%. The total area of environmentally constrained land is approximately 8 acres. Development was prohibited in these areas for both scenarios.

Additional Development Potential

Additional Development Potential is calculated by the formulas below and the assumptions discussed previously. These formulas are applied to all buildable areas. Table 3 - 0 describes the build out analysis results.

- $\text{Additional Dwelling Units} = ((\text{Buildable Area}) * (\text{Use Fraction}) * (\text{Dwellings per acre}) * (\text{Efficiency Factor})) - (\text{Existing Dwelling Units})$
- $\text{Additional Non-Residential Floor Area} = ((\text{Buildable Area}) * (\text{Use Fraction}) * (\text{FAR}) * (\text{Efficiency Factor})) - (\text{Existing Non-Residential Floor Area})$

**Table 2-0
Build Out Results**

Scenario	RESIDENTIAL LAND USE			NON-RESIDENTIAL LAND USE		
	EXISTING DWELLING UNITS	ADDITIONAL DWELLING UNITS	TOTAL DWELLING UNITS	EXISTING COMMERCIAL FLOOR AREA (sq. ft.)	ADDITIONAL COMMERCIAL FLOOR AREA (sq. ft.)	TOTAL COMMERCIAL FLOOR AREA (sq. ft.)
Current Zoning	1	96	97	7,500*	7,500	15,000
Proposed Zoning	1	47	48	7,500*	14,487	21,987

*The existing barn is included as existing commercial floor area.

3D Visualization

The build out results were used to create a 3D scene for each scenario. The 3D scene is intended to help the Planning Commission, Town Planner, and property owner visualize the effect the

development scenarios will have on the scenic entrance of Richmond. To preserve the scenic corridor of Route 2, additional development is sited on the north-east side of the property behind the existing barn and house. Figure 1-0 is a 3D snapshot of the Current Zoning. Under the current zoning, the build out is 96 dwelling units. Figure 2-0 is a snapshot of the 3D of the proposed zoning. The residential development potential is 47 units. The total number of structures in the 3D scene is less than the actual amount reported by the build out analysis. Due to the time constraint for this project, staff was unable to make adjustments to the 3D scene to reflect the final build out quantities adjusted after the Planning Commission meeting on May 5, 2010.

Figure 1-0
Current Zoning



Figure 2-0 Proposed Zoning

