



## TOWN OF SALEM, NEW HAMPSHIRE

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Community Development Department

# Memo

To: Planning Board  
From: John Vogl, GIS Manager  
Date: 1/19/2021

Re: Estimate of emergency response calls resulting from Tuscan Village build-out

The Town of Salem GIS was utilized to model and estimate future response impacts associated with the full buildout of Tuscan Village, as proposed in the site plan amendment, submitted on November 23, 2020. This was compared to the Approved Conceptual Master Plan dated 5/31/2018 (with totals amended to represent actual construction).

The final analysis, presented in Table 1 below is the result of an extensive process to identify localized multipliers to estimate call volumes by land use type. These multipliers were applied to projected land uses of both the Existing, Approved Tuscan Village Site Plan (inclusive of the North Village and existing built conditions) and the proposed Site Plan Amendment. The result illustrates the changes between each proposal and serve as a valuable planning tool to manage responses and future equipment or staffing needs.

**Table 1: Estimated Police and Fire Calls for service resulting from Tuscan Village Buildout**

Area	Estimate of New Annual Police Calls*			Estimate of New Annual Fire Calls		
	Approved Plan	Amended Plans	Change	Approved Plan	Amended Plan	Change
Central Village	1078	831	-247	212	232	20
Mall Rd	187	221	34	337	128	-209
North Village	266	266	0	105	105	0
Rock Office District	71	376	305	108	284	176
South Village	198	184	-14	35	32	-3
<b>Total</b>	<b>1,800</b>	<b>1,878</b>	<b>78</b>	<b>797</b>	<b>781</b>	<b>-16</b>

\* Does not include self-initiated responses carried out by Officers

The process to develop this table utilized coordination between the GIS Manager and Police and Fire Departments to map out 3 years (2018-2020) of actual call history to the building from which it originated, as mapped in the GIS inventory. This allowed the transfer of building use and size information. With that data, we were able to generate summary tables that reflected total call volume by land use and building space and then reported out multipliers for # calls per

total square footage per use. The multipliers correspond with National Fire Incident Reporting System (NFIRS) standards, which include Places of Assembly (Restaurants, Theater, Gyms), Health Care, Single Family dwelling, Multi-Family Dwelling, Hotels/Motels, Mercantile Business, Office/Industrial, Manufacturing, Parking and Storage. Residential volumes are calculated by number of units; parking is calculated by number of spaces; the remainder are calculated by building square footage. By this analysis, impacts are derived directly by the local experienced history, based on the types of uses already present in Salem. These multipliers then applied to the different land uses present in the Tuscan Village and then aggregated by neighborhood, as presented in Table 1. Table 2 below illustrates the localized multipliers.

Numbers reflect aggregate annual calls. Regarding the Police Department, the source information was limited to calls for service initiated by the public. There remains outstanding a significant number of self-initiated responses that are attended by Officers, particularly motor vehicle violations. The extent of these calls are not included in this analysis.

***Table 2: Localized multipliers for Emergency Response Calls for Service, Salem NH.***

Land Use Type	Police Call Factor	Fire Call Factor	Unit of Measurement
Places of Assembly	2.26	0.36	per 1,000 square feet
Health Care	0.34	1.47	per 1,000 square feet
Single Family Dwelling (Market Rate)	0.39	0.23	per housing unit
Single Family Dwelling (Age Restricted)	0.09	0.14	per housing unit
Multi-family Dwelling (Market Rate)	0.35	0.23	per housing unit
Multi-Family Dwelling (Age Restricted)	0.17	0.66	per housing unit
Hotel/motel	2.85	0.58	per 1,000 square feet
Mercantile Business	0.62	0.12	per 1,000 square feet
Office/Industrial	0.12	0.03	per 1,000 square feet
Manufacturing	0.16	0.03	per 1,000 square feet
Parking	0.09	0.01	per Space