



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 |
| Total | 1,800 | 1,878 | 78 | 797 | 781 | -16 |

* 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 |