



**Combined Staffing Analysis of Silverton and Sycamore Township  
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## EXECUTIVE SUMMARY

The Village of Silverton, Ohio (Silverton) and Sycamore Township, Ohio (Sycamore) contracted with the University of Cincinnati's Institute of Crime Science (ICS) to determine the police staffing needs for each of their jurisdictions. Currently, neither the village nor the township has its own police department. Instead, they contract with the Hamilton County Sheriff's Office (HCSO) to provide police patrol services. Previously, ICS prepared an individual staffing report for each jurisdiction. This combined staffing report is being provided as a springboard for future discussions on alternatives for providing police services in these jurisdictions. Before looking at other ways of providing police services, it is important to know what the service demands are and how many officers are needed to meet those demands.

To prepare this report, ICS researchers analyzed combined calls for service data and crime data as if both jurisdictions were one community. Following the data collection and analysis processes, ICS employed two different methodologies to examine the staffing needs of a combined jurisdiction. Generally, three different methodologies are used to determine staffing needs. However, due to data limitations discussed later, ICS only employed two of the three methodologies: peer comparison and citizen initiated calls for service workload. It is also important to note that most staffing analyses are conducted to determine staffing levels of an existing police agency. Staffing analyses commonly look at patrol staffing as part of the overall staffing needs of a police agency, but also tend to include analyses on deployment practices and organizational structure. Since neither jurisdiction currently has its own police agency, with an organizational structure or deployment strategy, only overall staffing needs are analyzed.

The peer comparison analysis compares jurisdictions that have their own police departments. There are no standards for comparison among jurisdictions that contract for police services. As mentioned above, neither Silverton nor Sycamore has its own police department, therefore comparisons among peer agencies may be informative if Silverton and Sycamore would ever consider forming a joint police district with one or more neighboring jurisdictions.

In the peer comparison model, ICS researchers compared a combined Silverton/Sycamore jurisdiction with villages/cities, across the United States, that have a similar population size and crime level. *National analysis revealed that the average number of sworn police officers in the villages/cities most similar to Silverton/Sycamore combined is 43.*

Next, ICS conducted a peer comparison, only looking at other Ohio cities, in order to account for possible regional differences. In-state only comparisons provide a more robust estimation of staffing needs since each region has its own unique characteristics. *Based on the in-state comparison, ICS researchers found that the average number of sworn personnel in these departments is 38, which is close to the national average.*

Since Silverton/Sycamore does not have its own police department, in the per capita approach we need to look at the number of officers *assigned solely to uniformed patrol* instead of the total number of sworn officers in a police department. Using the International City/County Management Association's (ICMA) recommendation that 60% of total sworn personnel should

be allocated to uniformed patrol functions, *the per-capita comparison method indicates that Silverton/Sycamore should have 23 officers assigned to uniformed patrol functions if they operated their own police department.*

ICS researchers do not rely solely on the peer comparison staffing model because it does not consider the workload of police departments. Therefore, using 2017 combined calls for service (CFS) data, ICS applied a workload-based calculation method to determine the number of officers needed to answer and clear calls for service.

The workload-based calculation method uses only citizen initiated calls for service data. This approach strictly follows the International Association of Chiefs of Police (IACP)'s recommendation that patrol officers should spend one third of their time on citizen initiated calls for service, one third of their time on administrative tasks, and one third of their time on proactive policing. *This workload-based calculation method suggests that 4 officers on day shift and 3 officers on night shift can clear all calls for service for each shift.* These numbers could change if Silverton/Sycamore developed a comprehensive plan for proactive policing or self-initiated activity for their officers as a percentage of their patrol time.

Three scenarios are presented as part of this staffing analysis. Scenario 1 presents staffing requirements for only reactive policing (answering citizen calls for service with no proactive time) and indicates that 2 officers for the night shift and three officers for the day shift can handle all calls for service. Scenario 2 presents staffing with minimal proactive time provided by HCSO and indicates that 4 officers on the day shift and 3 officers on the night shift can handle all calls for service. Scenario 3, which presents the needed patrol staffing level if Silverton/Sycamore had its own police department and their patrol force engaged in minimal proactive time, indicates that 4 officers on the day shift and 3 officers on the night shift can handle all calls for service, using a four squad officer deployment plan.

Appendix C, A Brief Synopsis of Part I Crime in the Village of Silverton and Sycamore Township, is attached to this study. It provides an overview of reported crime and the places in which the crimes occur. This information can be useful in developing patrol strategies or overall agency philosophies, such as problem-oriented policing. Proactive strategies that focus on repeat crime locations can more efficiently use officer time, but strategies of this type may require a dedicated officer or specialized unit to be most effective.

## **STAFFING ANALYSIS**

One of the fundamental questions for police departments is how many sworn personnel are needed to efficiently and effectively perform policing functions in a given jurisdiction? Unfortunately, there is no single standard method for answering this question. There are different methods/approaches used to determine the staffing needs of police departments, such as: the per capita approach, the minimum staffing approach, and a workload based approach. Each approach has certain advantages and disadvantages. In this report, the University of Cincinnati's Institute of Crime Science (ICS) combines both the per capita and the workload-based approaches to calculate police staffing needs for a possible Joint Police District Police Department to provide police services to the Village of Silverton (Silverton) and Sycamore Township (Sycamore).

Furthermore, a unique aspect of this staffing analysis is that neither Silverton nor Sycamore currently have either an independent or joint police department. Instead, they contract with the Hamilton County Sheriff's Office to cover all citizen calls for police service. Previous staffing analyses conducted by ICS have been for jurisdictions with their own police departments. Many factors can influence agency staffing decisions. This report will only show the minimum number of patrol units needed to answer calls for service in the 3 different scenarios.

ICS makes no recommendations on deployment and gives no opinion on the percentage of time that Silverton or Sycamore either wants, or should dedicate to proactive policing. One of the reasons to point this out is because many of the functions and activities regularly performed by police agencies may not take place in a jurisdiction that contracts with an outside entity for its police services. Often these contracts are for a specific number of hours of police patrol services with only a few specific details as to how precisely that service will be provided. Jurisdictions with their own police departments have far better control and influence over the activities of their police officers, especially their unencumbered patrol times. A jurisdiction that contracts out police services has very limited influence over those same activities, unless the precise scope of work to be performed is clearly articulated in the Service Contract or Agreement. Consequently, a staffing analysis may not be able to include a recommendation for optimal agency staffing, other than for responding to citizen initiated calls for service. If no proactive activities are undertaken by the contracting entity (e.g., problem solving, formal community policing programs, targeted enforcement or patrols) there is no empirical methodology currently available to determine optimal staffing while also including those activities.

Silverton and Sycamore currently contract with the Hamilton County Sheriff's Office (HCSO) for their police patrol services. HCSO also provides contract police patrol services to other jurisdictions, including surrounding villages and townships, and provides police coverage for unincorporated areas of the County. Because of this, it is not uncommon for unassigned HCSO units to assist in the contracted area, or for contracted HCSO units to assist outside of their contracted area. In this HCSO model, each jurisdiction contracts for a specific amount of daily police coverage. Usually, HCSO and the contracting jurisdiction jointly determine what coverage is needed to provide the police services. This may be the result of analyzing calls for service and crime data, or it may be coverage based on what a community can afford to pay. The cost of a contract or agreement is derived from the actual number of hours of police service provided. In a recent discussion with the Silverton village manager and the Sycamore township administrator, ICS researchers learned that cost was a primary factor in determining their current HCSO staffing levels. There was some discussion with HCSO about calls for service and other data to arrive at a final staffing determination, but the data had little influence on the final decision.

Silverton currently contracts for one 24-hour car per day, 7 days per week and two power shift cars per week. Power shift cars are scheduled for 40 hours per week shifts with no replacement for off days or other days when the assigned officer is not available (sick, vacation, training etc.). Power shift cars are designed to provide additional coverage during peak service demand times. Currently, one power shift car works Monday-Friday from 7:00 AM to 3:30 PM and the second power shift car works Monday-Friday from 4:00 PM to 12:30 AM. Typically, the same HCSO deputies are assigned to the contract detail.

Sycamore currently contracts for 4 officers per shift 7 days a week with an extra officer (power shift) between the hours of 10 AM and 7 PM Monday through Friday. The power shift car is not replaced for off days or if the officer is otherwise absent.

As part of the existing contractual agreement, HCSO provides a Lieutenant to oversee the deputies assigned to Silverton and Sycamore at no added cost. In addition, one HCSO Sergeant has been recently assigned to the east side patrol districts to handle their cumulative administrative and support services as needed. These include criminal investigations, traffic crash investigation, bomb squad response and helicopter assistance. These positions are not included the ICS staffing analysis.

The Discussion section of this staffing analysis presents 3 scenarios for police patrol staffing to respond to Silverton and Sycamore citizen calls for service. Scenario 1 presents staffing for only reactive policing provided by HCSO (answering citizen calls for service with no proactive time) Scenario 2 presents staffing for minimal proactive time provided by HCSO, and Scenario 3 which presents a patrol staffing level if Silverton/Sycamore had their own police department and its patrol officers engaged in minimal proactive time (see Table 9).

### **Calls for Service Data**

The calls for service data used in this analysis came from the Hamilton County Communications Center (HCCC), which dispatches for almost all police agencies in Hamilton County. ICS used 2017 calls for service (the last full year of data available when the analysis started). Cleaning the data included removing duplicate calls, calls with missing associated call times, and calls where no unit was dispatched. ICS researchers noticed that calls for service in Silverton and Sycamore were not always answered by the contract cars assigned to those jurisdictions. Sometimes calls were answered by other HCSO contract cars from neighboring communities or by an HCSO unit assigned to the east side district of Hamilton County that was not contracted by any specific jurisdiction. Other times, Silverton or Sycamore-contracted cars answered calls for service in other communities. It is unknown why these calls were answered by units other than those assigned to Silverton and Sycamore. However, in the final analysis, the number of calls answered by non-contract units did not impact the required number of units to answer citizen calls for service.

### **Per Capita Approach<sup>1</sup>**

The per capita approach is fairly easy to understand and provides a rough and quick staffing estimate for a police department, based on similar law enforcement agencies in terms of their populations, crime rates, and geographic area (e.g., Southern states, Western states, etc.). Although it does not rely on any advanced statistical calculations, it offers a starting point to see how other agencies in the nation handles their safety needs based on certain similar characteristics (e.g., population, crime rates). In this report, ICS did not use a traditional per capita approach, which principally uses citizen-officer ratios and the population size of cities, because there are many drawbacks to using citizen-officer ratios to determine proper staffing

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<sup>1</sup> Revised as peer comparison in this study

levels. These drawbacks include differential workload of cities (in terms of calls for service), varying crime levels, and topographical differences (including population density per square mile). For this reason, ICS researchers generally employ FBI Uniform Crime Report (UCR) data to better compare cities, based on their various types of crime levels (e.g., property crimes, violent crimes), with the matching cities.

The per-capita approach does have certain advantages, such as quickly identifying the basic level of appropriate police staffing for Silverton/Sycamore when compared to police departments in similarly sized United States cities<sup>2</sup>.

### **The Population of Silverton and Sycamore Township**

The 2018 population of Silverton, Ohio was 4,757, and has been fairly stable since 2010. The population of Sycamore Township was 19,422. It is predicted that the population of Sycamore Township will rise to 19,660 in 2021 and 19,901 within six years. Combining the population of both jurisdictions, ICS defines the population range as 25,000 for our comparisons with other US and Ohio cities. Due the population stability in these areas over time, we do not expect any significant population changes in the next year.

Table 1 below shows that there are 607 US police departments<sup>3</sup> whose jurisdictional population falls within a range of 20,000 to 30,000 citizens. The combined population of Silverton and Sycamore specifically falls into this jurisdictional population range. When ICS researchers looked at the national staffing average for police departments in this population range, we found they have an average of 43 sworn personnel assigned. In this context, *Table 1 below suggests that the appropriate staffing level is 43 officers (this is the average of the two-populations range for average number sworn officers) for the combined jurisdiction of Silverton and Sycamore if they were to have their own police department.*

**Table 1. Average Number of US Law Enforcement Employees Based on Population**

<b>Number of Cities</b>	<b>Population Range</b>	<b>Average Sworn Officers</b>	<b>Average Civilians</b>	<b>Average Total Employees</b>
336	20,000 - 25,000	39	9	49
271	25,000 - 30, 000	48	11	58

Source: Federal Bureau of Investigation, Uniform Crime Report, 2017

<sup>2</sup> In our experience, using a peer comparison approach is safe and generates very similar results if it is done correctly. In statistics, we compare our results with the population (or hypothetical sampling distributions/populations) in order to determine whether the study outcome is rare or not. If the result/outcome substantially deviates from the norm (in this case, national average), then, we conclude that the outcome is very rare (high or low depending on the positional score on the population distribution). Given this context, we try to replicate statistical procedure with a peer comparison model in order to quickly identify the positional score of Silverton and Sycamore when compared to the national average (in statistical terms: population).

<sup>3</sup> This number is based on the number of police departments reported to UCR.

Table 2 below presents the population characteristics, annual crime counts, and employee counts for only similarly sized Ohio cities. In-state comparisons provide a more robust estimation because each region has its own unique characteristics. Seventeen police departments in Ohio have a population between 20,000 and 30,000 people. Each of these police agencies has a staffing range between a low of 19 sworn officers to a high of 47 officers. According to Table 2, *the average number of sworn personnel in these departments is 38 which is slightly below the national average.*

**Table 2. Average Number of Ohio Law Enforcement Employees in Similarly situated Ohio Cities, Based on 2017 UCR Data**

City	Population	# of Violent Crimes (2017)	# of Property Crimes (2017)	# of Sworn Personnel	Number of Civilians	Total Employees	Officer Ratio Per 1000 Citizens
Miamisburg	20,000	20	228	34	3	37	1.70
Oregon	20,055	37	665	45	13	58	2.24
Lebanon	20,726	22	361	26	10	36	1.25
Sidney	20,797	45	926	36	10	46	1.73
South Euclid	21,686	35	570	35	8	43	1.61
Fairfield Township	22,417	28	598	19	0	19	0.85
Marysville	22,952	7	144	36	7	43	1.57
Solon	22,971	11	175	47	17	64	2.05
Centerville	23,853	13	352	40	14	54	1.68
<b>Silverton/Sycamore*</b>	<b>24,179</b>	<b>39</b>	<b>690</b>	--	--	--	--
Sandusky	25,078	45	911	47	2	49	1.87
Troy	25,745	22	724	42	2	44	1.63
Xenia	26,037	53	821	41	26	67	1.57
Barberton	26,172	75	799	42	2	44	1.60
Wooster	26,883	73	776	40	3	43	1.49
Miami Township, Montgomery County	29,140	39	1,159	38	7	45	1.30
Delhi Township	29,573	20	514	30	2	32	1.01
Kent	29,995	67	496	42	14	56	1.40
<b>Average of Agencies</b>	<b>24,358</b>	<b>36</b>	<b>601</b>	<b>38</b>	<b>8</b>	<b>46</b>	<b>2</b>

Federal Bureau of Investigation, Uniform Crime Report, 2017

\*Numbers for Silverton/Sycamore not included in Average

## Summary of Per Capita Comparison Approach

The International Association of Chiefs of Police (IACP) advises that it is inappropriate to use a per capita approach when calculating the staffing needs of police departments because staffing allocation should be made as a result of more complex analyses, such as workload-based calculations. For this reason, any per capita comparisons should be interpreted with a caveat.

As stated earlier, Silverton and Sycamore do not have their own police departments and receive contracted police services from the HCSO, therefore, in the per capita approach we need to look at the number of officers *assigned solely to uniformed patrol* instead of the total number of sworn officers in a police department. To approximate the number of patrol officers that would be in a joint Silverton/Sycamore Police Department, if one existed, we use the International City/County Management Association (ICMA) recommendation that 60% of total sworn personnel should be allocated to uniformed patrol functions. Using this recommendation, the average number of sworn police officers in comparable Ohio jurisdictions is 38 as seen in Table 2 above, and 60% of this number is 22.8 sworn officers. *Using this analysis, the per-capita comparison method indicates that if Silverton and Sycamore combined for policing services, they should have 23 officers assigned to uniformed patrol functions if they operated their own police department.*

## Workload-based Approach

A workload-based approach requires a thorough data cleaning process and additional calculations, using available calls for service data, to calculate staffing. The idea behind a workload-based approach is that police maintain order for the public; therefore, public service requests (e.g., responding to citizen calls for service, investigating a crime, etc.) should determine the staffing size of a police department. While this approach generally has a valid base, researchers should always keep certain rules in mind about a workload-based approach before applying it to any police department. Most often researchers use one full year of calls for service data (12 months) as it provides numbers of calls for service, response times, and time spent on calls for that time period.

While this approach is generally approved in the staffing literature, there are several considerations that must be addressed/accounted for before making calculations. First, researchers need to know whether the police department currently applies any problem-oriented policing strategy to reduce calls for service in their jurisdiction. Failing to consider ongoing crime prevention efforts may yield underestimated staffing needs. Unlike simply responding to calls for service, proactive policing may take the same or more upfront time and resources from the police department. For this reason, researchers should conduct interviews with police departments to better learn the nature of their calls for service data *prior* to workload-based calculations being performed.

Secondly, researchers must consider the complexity of calls for service data points. Often times CFS data has input errors, missing cases, duplicate entries, and logical errors (e.g., the closing time of a call for service is earlier than dispatch time), which need to be cleaned *prior* to performing calculations.

Any data error can lead to a fatal calculation error – thereby creating either more or less staffing needs because this approach uses each call for service. To account for this, ICS extensively cleaned provided CFS data prior to performing the calculations.

Third, in certain cases, relying solely on agency data to calculate the staffing needs of a police department can be a harmful error for a police department because of the possible mistakes/additions/omissions in the police data/database. For this reason, the calculated results should be discussed with the police department in order to confirm whether their suggested staffing numbers accurately match with the realities of the police department current workload.

### **Calculating Patrol Unit Size for Silverton/Sycamore**

The uniformed patrol force of a police department has three main duties in any given jurisdiction: (1) responding to calls for service, (2) administrative tasks, and (3) proactive policing to support public order and build community relationships. IACP recommends that police officers working in a patrol assignment need to divide their time into three equal parts:

- one third of their time is allocated for responding to calls for service, and
- one third of their time is allocated for administrative tasks, and
- one third of their time is allocated for proactive policing.

There are two different widely used formulas to calculate the uniformed patrol size of a police department based on calls for service (CFS). The first formula was developed by Dr. Alexander Weiss, Ph.D. and takes into account only citizen-initiated calls for service time. In addition to this, Weiss's formula also requires calculation of the shift relief factor by considering officers' off days, vacation time, in-service training times, and sick time usage in determining overall agency staffing needs. This formula also suggests that the police officers working in a patrol function should spend one third of their time responding to citizen initiated calls for service, considering the shift relief factor.

The second formula was developed by the International City/County Management Association (ICMA) and takes into account all calls for service data (both citizen initiated and officer initiated) for calculations. ICMA calls this formula the "60% rule". The formula essentially states that a police officer working on patrol should spend a maximum 60% of his/her time on all types of calls for service, after considering off days, vacation, in-service training and sick time.

The two formulas are very close in their calculation methods. Dr. Weiss's formula considers only citizen-initiated calls for service; whereas the ICMA formula takes into account all calls (both citizen-initiated calls<sup>4</sup> and police-initiated calls<sup>5</sup>). ICS researchers generally employ both formulas in a staffing study to confirm the results from the two different calculation methods. However, in this analysis we will only use Dr. Weiss's formula for citizen generated calls for service. Using the data provided by HCSO, ICS was unable to determine, with enough certainty,

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<sup>4</sup> For instance, a call to report a crime or a situation that requires police assistance to resolve

<sup>5</sup> For instance, a traffic stop or investigative contact

the number of self-initiated calls for service and officer proactive activity to accurately include the ICMA formula in this staffing analysis.

Regardless of which formula is being used, they both require calculating the number of calls for service by hour, day of the week, month, and season because both approaches suggest that the optimum number of officers assigned to patrol duties should be calculated based on the highest month or season’s activity in order to maintain the IACP standard that at least 33% of an officer’s time be available for proactive policing over the course of the entire year.

Due to the data limitations explained above, this study will only employ Dr. Weiss’s formula for the Silverton/Sycamore staffing calculation

### Silverton/Sycamore Patrol Unit Calculation based on Weiss’s Formula

Table 3 below shows the 2017 citizen-initiated calls for service (CFS) for Silverton and Sycamore (the last full year of available data). There was a total of 14,859 citizen-initiated CFS. The cells of the table are colored based on call volume for each respective hour of the day (blue = lower volume and red = larger volume). The colors are calculated per column, rather than the full table.

As the heat map colors of Table 3 below suggest, the higher volume of CFS occurred between 10 AM and 8 PM. On average, 17.58 officer hours were spent to clear CFS in each day. That is, if we considered the patrol officers like a robot, 2.19 officers would need to work non-stop (8 hours a day) just to clear daily citizen initiated calls for service (17.58 hours / 8 hours = 2.19 officers).

**Table 3. Citizen Initiated Calls for Service (January 1, 2017 - December 31, 2017)**

Hour	Number of CFS	Total Service Hours	Average Number of CFS in a Day	Total Daily Service Hours to Clear CFS
0	425	206.86	29.2	0.57
1	341	190.3	33.48	0.52
2	278	174.79	37.72	0.48
3	220	108.51	29.59	0.3
4	216	116.09	32.25	0.32
5	223	87.44	23.53	0.24
6	251	84.84	20.28	0.23
7	409	160.38	23.53	0.44
8	560	213.38	22.86	0.59
9	663	238.34	21.57	0.66
10	732	283.12	23.21	0.78
11	780	301.2	23.17	0.83
12	821	341.04	24.92	0.94
13	833	378.76	27.28	1.05
14	807	330.33	24.56	0.91

15	920	390.68	25.48	1.08
16	975	411.16	25.3	1.13
17	972	406.55	25.1	1.12
18	912	413.19	27.18	1.14
19	908	352.59	23.3	0.97
20	761	308.06	24.29	0.85
21	677	385.32	34.15	1.06
22	635	253.83	23.98	0.7
23	540	242.31	26.92	0.67
<b>Total</b>	<b>14,859</b>	<b>6,379.07</b>	<b>632.85</b>	<b>17.58</b>

Table 4 below displays more detailed information for citizen-initiated calls for service. ICS analyses show that the average HCSO response time to citizen-initiated CFS is 6.04 minutes and average total service time to clear the call is 29.96 minutes. Further analyses suggest that 65.7% of citizen-initiated calls were responded to and handled by one officer (9765 / 14859 = .657). That is, no back up unit was needed. Table 4 also shows that in 26.3% of citizen-initiated calls, two officers responded. Rarely, were there calls with three or more responding officers (7.0%). It is important to calculate backup unit involvement to correctly determine the total amount of officer service time used for citizen-initiated calls. Failing to consider backup units for citizen-initiated calls might yield significantly underestimated staffing levels for a police department. For this reason, we carefully cleaned the data and calculated multiple patrol officers' involvement for all the Silverton and Sycamore citizen-initiated calls for service.

**Table 4. Total Service Hours by Backup Units for Citizen Initiated CFS Data**

Hour	One Officer		Two Officers		Three Officers		Four Officers		Five + Officers	
	# of CFS	Avg Service Mins	# of CFS	Avg Service Mins	# of CFS	Avg Service Mins	# of CFS	Avg Service Mins	# of CFS	Avg Service Mins
0	252	15.18	131	17.10	29	25.57	4	19.95	--	--
1	191	15.24	103	17.83	29	25.93	3	23.89	2	36.96
2	155	16.23	98	22.20	17	41.30	4	59.57	--	--
3	126	15.67	65	19.40	21	21.65	3	34.36	--	--
4	131	15.37	57	17.48	22	25.38	4	62.33	2	51.93
5	137	15.63	72	16.53	11	15.03	2	34.88	1	18.84
6	167	14.07	65	12.17	15	15.37	--	--	--	--
7	270	16.14	97	14.56	31	16.79	7	17.81	--	--
8	380	16.44	160	15.25	25	18.77	2	17.09	2	34.77
9	470	15.33	168	15.85	19	18.60	2	24.25	1	61.17
10	551	16.10	151	19.45	29	24.26	3	16.69	4	26.19
11	574	15.25	166	17.46	25	28.68	7	30.81	3	37.13
12	570	16.11	190	17.60	38	29.77	5	14.30	--	--
13	546	17.07	217	18.17	52	24.22	6	28.44	4	46.26
14	535	15.79	222	17.63	38	22.56	5	16.22	2	60.42

15	626	16.75	220	16.72	44	20.55	7	40.40	2	82.01
16	673	15.83	250	18.78	52	19.17	8	38.95	4	46.01
17	597	15.29	289	16.39	63	18.50	13	23.13	2	58.30
18	561	15.10	239	14.74	72	19.88	15	27.22	4	48.74
19	607	14.46	229	15.58	52	20.27	8	29.47	4	32.97
20	503	16.03	199	17.40	53	17.10	9	20.52	3	19.84
21	410	16.24	193	20.17	43	27.24	5	81.05	3	55.32
22	407	15.51	175	16.35	43	19.76	6	28.03	3	14.16
23	326	15.88	164	19.33	40	21.91	8	28.57	2	23.49
	<b>9,765</b>	<b>376.71</b>	<b>3920</b>	<b>414.12</b>	<b>863</b>	<b>538.28</b>	<b>136</b>	<b>717.93</b>	<b>48</b>	<b>754.50</b>

Table 5 below shows the distribution of citizen-initiated CFS by call type occurring in 2017 (does not include self-initiated traffic stops or enforcement). Medical-related calls for service comprised the highest percentage of dispatched CFS in Silverton and Sycamore (22.2%). Traffic related calls come in second (14.7%), and the third highest percentage is Public Service-related CFS (14.0%).

It is also important to note the total hours spent per year on the various calls for service. For example, even though Crimes in Progress make up only 3.7% of calls, the time spent servicing those calls ranks third in overall hours per year (11.3%). The miscellaneous call type aggregates various types; Appendix A is a complete list of call types responded to in 2017 and the total time spent servicing the calls. This table was included for reference and to stimulate further discussion with HCSO on calls for service and workload in Silverton and Sycamore.

**Table 5. Classification of 2017 Calls for Service by Percentage of Calls and Time Spent**

Call Type	Number of Calls for Service	Total Minutes per Year	Total Hours per Year	% of Citizen-Initiated CFS	% of Time Spent
Traffic Related	2,292	91,836.7	1,530.7	14.74%	20.26%
Medical Response	3,458	73,767.0	1,229.3	22.23%	16.27%
Crimes in Progress	574	51,111.1	851.9	3.69%	11.28%
Reports	1,406	48,692.3	811.5	9.04%	10.74%
Trouble	761	35,142.9	585.7	4.89%	7.75%
Alarm	1,838	29,025.5	483.8	11.82%	6.40%
Domestic Trouble	389	27,075.7	451.3	2.50%	5.97%
Investigation	520	25,368.0	422.8	3.34%	5.60%
Public Service	2,180	24,306.6	405.0	14.02%	5.36%
Suspicious Activity	791	20,508.8	359.8	5.09%	4.76%
Fire Related	247	10,533.6	175.6	1.59%	2.32%
Information	804	9,190.0	153.1	5.17%	2.03%
Disorderly/Noise	263	4,271.0	71.2	1.69%	0.94%

Miscellaneous	30	1,340.3	22.3	0.19%	0.30%
<b>Total</b>	<b>15,553</b>	<b>452,169.5</b>	<b>7,554</b>	<b>100%</b>	<b>100%</b>

Table 6 below displays citizen-initiated CFS by hour and day of the week. Even though throughout the year the number of CFS substantially varies across the hours of the day, it is fairly stable for the days of the week, except for Sundays. On average, each weekday generated approximately 2,122 citizen-initiated CFS in 2017.

**Table 6. Citizen Initiated Calls for Service by Weekdays (January 1, 2017 - December 31, 2017)**

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
0	49	49	41	70	74	83	59	425
1	46	40	40	49	46	44	76	341
2	39	36	32	33	40	49	49	278
3	25	31	31	44	23	30	36	220
4	29	19	29	30	34	45	30	216
5	34	36	26	28	36	33	30	223
6	32	45	36	43	31	40	24	251
7	52	64	78	70	58	48	39	409
8	91	77	91	88	102	59	52	560
9	114	100	110	95	102	85	57	663
10	103	124	106	120	110	90	79	732
11	113	115	111	113	136	113	79	780
12	118	108	126	134	142	101	92	821
13	111	114	119	126	128	141	94	833
14	127	104	116	117	137	106	100	807
15	125	133	125	150	158	123	106	920
16	162	157	150	135	148	113	110	975
17	135	149	168	126	161	119	114	972
18	133	134	138	145	139	116	107	912
19	132	128	137	126	157	133	95	908
20	98	120	111	107	122	110	93	761
21	81	101	104	99	111	111	70	677
22	75	88	86	83	116	107	80	635
23	61	69	88	65	89	97	71	540
<b>Total</b>	<b>2,085</b>	<b>2,141</b>	<b>2,199</b>	<b>2,196</b>	<b>2,400</b>	<b>2,096</b>	<b>1,742</b>	<b>14,859</b>

Table 7 below breaks down citizen-initiated calls for service by hour, month, and season. Table 7 shows that the highest number of citizen-initiated calls for service was recorded in August of 2017. The lowest number of CFS occurred in November.

Current research shows most US police departments report their highest level of CFS numbers in August and their lowest level of calls for service in February.

Table 7 below also suggests that there is a seasonal trend and the Spring and Summer months receive higher volume of calls for police service. ICS analysis also reveals that we need to consider seasonal differences when calculating the optimum number of personnel. Existing studies suggest if there are seasonal differences, the required staffing numbers should be calculated by considering the month that generates the highest volume of calls. While this will estimate more officers needed in the low-volume months, it does not leave high-volume months with fewer officers than are needed to clear all calls. This is done to keep the personnel number at the optimum level regardless of the fluctuations of individual seasons and months.

**Table 7. Citizen Initiated CFS by Month & Season (January 1, 2017 - December 31, 2017)**

Hour	Winter			Spring			Summer			Fall		
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
0	29	34	32	34	31	43	40	50	38	35	38	21
1	29	37	26	29	21	48	32	27	30	23	21	18
2	16	18	14	23	21	24	20	34	29	35	31	13
3	16	21	19	14	17	28	15	18	21	21	15	15
4	21	18	13	14	15	26	22	23	15	14	19	16
5	18	18	17	17	17	18	18	19	15	14	35	17
6	22	26	18	18	17	23	14	19	27	20	32	15
7	27	33	26	34	41	38	45	35	33	31	40	26
8	31	48	45	55	39	50	50	40	51	59	52	40
9	36	52	38	55	57	61	70	52	68	73	65	36
10	45	67	68	50	65	72	58	58	68	78	61	42
11	62	61	61	69	64	76	68	61	81	68	54	55
12	51	69	46	85	56	78	63	85	79	84	75	50
13	55	60	70	69	68	72	77	80	89	68	74	51
14	47	75	43	81	74	66	77	81	83	67	63	50
15	61	60	79	81	83	89	94	84	101	83	56	49
16	56	79	69	85	90	97	101	93	98	81	71	55
17	76	79	74	77	81	100	94	89	84	80	80	58
18	58	79	63	80	79	94	91	78	88	73	79	50
19	62	66	79	78	83	70	81	84	94	78	72	61
20	57	63	47	49	60	82	71	73	61	90	63	45
21	51	51	65	42	60	70	76	57	64	50	54	37
22	42	40	42	47	70	51	67	64	60	53	59	40
23	50	36	41	47	36	37	64	47	46	42	59	35
<b>Total</b>	<b>1018</b>	<b>1190</b>	<b>1095</b>	<b>1233</b>	<b>1245</b>	<b>1413</b>	<b>1408</b>	<b>1351</b>	<b>1423</b>	<b>1320</b>	<b>1268</b>	<b>895</b>
<b>Seasonal Totals</b>	<b>3,303</b>			<b>3,891</b>			<b>4,182</b>			<b>3,483</b>		

**Shift Relief Factor**

Dr. Weiss’s formula also requires the calculation of a shift relief factor to compensate for officers’ time off, such as regularly scheduled off days, training, vacation, and sick times.

Because neither Silverton nor Sycamore has a police department, we do not have historical personnel data to calculate their precise shift relief factor. Based on ICS researchers' experiences with different police departments' staffing analyses, *the average shift relief factor is 0.36*. Thus, we will use this common finding as the shift relief factor for the Silverton/Sycamore analysis.

### **Calculating Staffing of Silverton/Sycamore**

Using the average shift relief factor of 0.36, we then calculated the required number of patrol officers using Dr. Weiss's formula. The calculations in Table 8 below, Columns A - D are dependent on the citizen-initiated calls for service (N=14,859) that occurred between January 1, 2017 and December 31, 2017. Column D presents the number of hours needed to clear all CFS in a single day. Collectively, Silverton/Sycamore require 17.58 hours on average to clear all CFS that occur in a single day. It also suggests that the average required time to clear the call varies according to time of the day. For instance, it takes approximately 0.57 hours on average to clear a call at midnight, but 1.12 hours at 5:00 PM.

For the next step, ICS added the shift relief factor as explained above (Column E). Continuing the midnight hour example, if we added a shift relief factor of 0.36 to 0.57, the required hours will increase from 0.57 to 0.78 ( $[0.57*0.36] + 0.57 = 0.78$ ). It now takes 23.9 total hours to clear all CFS in a single day, after accounting for the shift relief factor.

IACP recommends that a patrol officer spend one third of their time on citizen-initiated calls, and that the remaining two thirds of their time should be equally split between proactive policing and administrative tasks. Given this context, the ideal patrol officer obligated time for citizen-initiated calls is 33%. In this scenario, Silverton/Sycamore require 2 patrol officers during the midnight hour to appropriately clear citizen calls for service as well as maintaining 66% of their time available for proactive policing and administrative tasks.

The numbers displayed in Table 8 below, under the title of '50% obligated with shift relief' (Column F), are absolute numbers which represent the precise number of personnel required to exclusively handle citizen calls for service during the listed hours and perform no other police functions (no administrative tasks, proactive patrol or self-initiated activities). For example, Silverton/Sycamore requires 0.19 officers dedicated strictly to handling citizen calls for service during the midnight hour. In order to convert these absolute numbers to the number of required personnel per shift, ICS multiplied by 8 hours ( $.19*8=1.52$ ) because our math is based on 8-hour shifts<sup>6</sup>.

The last column of Table 8 below reports the required number of patrol officers by both shift and hour. ICS rule of thumb is not to exceed 50% obligated time for citizen calls during any hour of the day. For this reason, we would normally take the average of the minimum and the maximum

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<sup>6</sup> Even though HCSO generally uses 1- hour shifts, ICS's calculation is based on 8-hour shifts. The math is the same for both. With 8-hour shifts, police officers work 5 days a week and get two days off, and with 12-hour shifts, police officers work either three days for 12 hours or 4 days for 12 hours and take 2 regular off days. Note that sleeping/rest time does not count as regular off days. Regular off days are weekends (2 days) in most governmental jobs. The same rule is valid for a police department with a rotating off days schedule (regular off days are not required to be weekends only).

number of required personnel to efficiently perform the daily patrol tasks. In this context, *ICS recommends that day shift should have 3 patrol officers assigned and the night shift should have 3 patrol officers assigned, excluding supervisors.*

**Table 8. Required Patrol Officers Based on the Citizen-Initiated CFS, 2017**

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	
Shifts	Hour	Total # of CFS (Year)	Total Service Hours (Year)	Avg # of CFS (Daily)	Total Hours Needed (Daily)	Adding Shift Relief Factor	Staffing Need - 50% Obligated	Staffing Need - 33% Obligated	Staffing Per Shift [Min – Max]
<b>Night Shift</b>	0	425	206.86	1.18	0.57	0.78	0.19	0.29	2 - 2
	1	341	190.3	0.94	0.52	0.71	0.18	0.27	<b>1 - 2</b>
	2	278	174.79	0.77	0.48	0.65	0.16	0.25	1 - 2
	3	220	108.51	0.6	0.3	0.41	0.10	0.15	1 - 1
	4	216	116.09	0.6	0.32	0.44	0.11	0.16	1 - 1
	5	223	87.44	0.61	0.24	0.33	0.08	0.12	1 - 1
<b>Day Shift</b>	6	251	84.84	0.69	0.23	0.31	0.08	0.12	1 - 1
	7	409	160.38	1.13	0.44	0.60	0.15	0.23	1 - 2
	8	560	213.38	1.54	0.59	0.80	0.20	0.30	2 - 2
	9	663	238.34	1.83	0.66	0.90	0.22	0.34	2 - 3
	10	732	283.12	2.01	0.78	1.06	0.27	0.40	2 - 3
	11	780	301.2	2.15	0.83	1.13	0.28	0.43	2 - 3
	12	821	341.04	2.26	0.94	1.28	0.32	0.48	3 - 4
	13	833	378.76	2.3	1.05	1.43	0.36	0.54	3 - 4
	14	807	330.33	2.22	0.91	1.24	0.31	0.47	2 - 4
	15	920	390.68	2.55	1.08	1.47	0.37	0.56	3 - 4
	16	975	411.16	2.68	1.13	1.54	0.38	0.58	<b>3 - 5</b>
	17	972	406.55	2.68	1.12	1.52	0.38	0.58	<b>3 - 5</b>
<b>Night Shift</b>	18	912	413.19	2.51	1.14	1.55	0.39	0.59	<b>3 - 5</b>
	19	908	352.59	2.49	0.97	1.32	0.33	0.50	3 - 4
	20	761	308.06	2.09	0.85	1.16	0.29	0.44	2 - 4
	21	677	385.32	1.86	1.06	1.44	0.36	0.55	<b>3 - 4</b>
	22	635	253.83	1.74	0.7	0.95	0.24	0.36	2 - 3
	23	540	242.31	1.48	0.67	0.91	0.23	0.35	2 - 3
<b>Total</b>		<b>14859</b>	<b>6379.07</b>	<b>40.91</b>	<b>17.58</b>	<b>23.91</b>	<b>5.98</b>	<b>9.06</b>	--

However, as explained above, there is a seasonal variance in calls for service requests. Therefore, we calculated each column and the estimated the optimal number of officers using only the month of August (highest monthly CFS volume) which is displayed in Table 8a below. *In this context, ICS recommends 4 patrol officers for the day shift and 3 patrol officers for the night shift. This is the average of the minimum and maximum number of officers need to clear calls for service which is based on the 50% and 33% obligated time models for answering calls for service and includes some proactive policing time.*

**Table 8a. Required Patrol Officers Based on the Highest Citizen Initiated CFS in August 2017**

		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>
Shifts	Hour	#of CFS	Total Service Hours	Average Number of CFS in a Day	Total Hours Needed (Daily)	Adding Shift Relief Factor	Staffing Need - 50% Obligated	Staffing Need - 33% Obligated	Min - Max Staffing Per Shift
<b>Night Shift</b>	0	40	23.65	1.43	0.84	1.14	0.29	0.43	2 - 3
	1	32	19.2	1.1	0.66	0.90	0.22	0.34	<b>2 - 3</b>
	2	20	9.39	0.74	0.35	0.48	0.12	0.18	1 - 1
	3	15	10.2	0.54	0.36	0.49	0.12	0.19	1 - 1
	4	22	14.58	0.81	0.54	0.73	0.18	0.28	1 - 2
	5	18	7.22	0.72	0.29	0.39	0.10	0.15	1 - 1
<b>Day Shift</b>	6	14	3.65	0.5	0.13	0.18	0.04	0.07	1 - 1
	7	45	13.68	1.61	0.49	0.67	0.17	0.25	1 - 2
	8	50	13.54	1.72	0.47	0.64	0.16	0.24	1 - 2
	9	70	28.76	2.41	0.99	1.35	0.34	0.51	3 - 4
	10	58	26.85	2.07	0.96	1.31	0.33	0.49	3 - 4
	11	68	23.39	2.34	0.81	1.10	0.28	0.42	2 - 3
	12	63	22.41	2.17	0.77	1.05	0.26	0.40	2 - 3
	13	77	32.03	2.66	1.1	1.50	0.37	0.57	3 - 5
	14	77	42.15	2.66	1.45	1.97	0.49	0.75	4 - 6
	15	94	34.4	3.24	1.19	1.62	0.40	0.61	3 - 5
	16	101	37.83	3.48	1.3	1.77	0.44	0.67	<b>4 - 5</b>
	17	94	39.08	3.24	1.35	1.84	0.46	0.70	<b>4 - 6</b>
<b>Night Shift</b>	18	91	35.21	3.25	1.26	1.71	0.43	0.65	<b>3 - 5</b>
	19	81	24.69	2.79	0.85	1.16	0.29	0.44	2 - 4
	20	71	27.1	2.45	0.93	1.26	0.32	0.48	3 - 4
	21	76	34.11	2.71	1.22	1.66	0.41	0.63	<b>3 - 5</b>
	22	67	23.27	2.31	0.8	1.09	0.27	0.41	2 - 3
	23	64	22.33	2.21	0.77	1.05	0.26	0.40	2 - 3
<b>Total</b>		<b>1408</b>	<b>568.72</b>	<b>49.16</b>	<b>19.88</b>	<b>27.04</b>	<b>6.76</b>	<b>10.24</b>	--

### Discussing the Staffing Needs of a Joint Police District

Silverton currently contracts for one 24-hour car per day 7 days per week and two power shift cars per week. Power shift cars work 5 days per week. One car is scheduled 7:00 AM -3:30 PM and one is scheduled 4:00 PM – 12:30 AM. Sycamore currently contracts for 4 officers per shift 7 days a week with an extra officer (power shift) between the hours of 10 AM and 7 PM Monday through Friday.

If we look at the combined number of officers working in Silverton and Sycamore on a Monday day shift, 5 officers would be working at 6:00 AM, 6 officers working between 7:00 AM and 10:00 AM, and 7 officers until 6:00 PM. From the tables above in the combined analysis, 4 officers should be sufficient on the day shift, 3 officers on the night shift and no power shift required to simply answer calls for service. So, by just combining the officers working in Silverton and Sycamore on a Monday day shift, the jurisdiction would be over staffed based on the analysis above for the number of *patrol* officers that would be needed to *simply* answer citizen calls for service. Calculations do not consider the additional supervision, investigative, or administrative services that are currently provided by HCSO.

Below, we present three scenarios as to how Sycamore and Silverton can use the data presented in this report. The first scenario is “business as usual”, which suggests using the staffing report to adjust current staffing levels. The second scenario estimates staffing if the current HCSO contract began including specific proactive policing activities. The third and final scenario presents staffing if Sycamore and Silverton were to develop a joint police department and handle all policing services themselves.

### **Scenario 1: Business as Usual**

In this scenario, ICS researchers calculated the staffing needs of Silverton and Sycamore if they were to continue to contract for policing services from HCSO. Contracted officers would continue to only answer citizen calls for service.

From Table 8a above, we calculated the reactive policing needs of Silverton and Sycamore. The total time required to clear calls for service for the midnight hour is 1.14 hours (including shift relief factor). That means a police officer can handle and clear all calls for service received at the midnight hour in about one hour. This number/hour is an absolute number and we need to convert this absolute number in order to reflect how many officers would be needed to clear calls for service for the entire shift. The night shift is 12 hours (from 6 pm to 6 am), the total required time to answer CFS, during the night shift, is 12.06 hours (the sum of Table 8a Column E from 6:00 pm to 6 am). Given this context, the required number of personnel for the night shift should be  $12.06 / 8 = 1.51$  officers. In addition to this number, we need to add an additional 33% time block to account for the many administrative tasks of police officers. Thus, the required personnel for the night shift becomes  $(1.51 * 0.33) + 1.51 = 2.01$ . In other words, 2 officers can clear calls for service during the night shift with no other proactive or unobligated time.

Using the same formula for the day shift (6 am to 6 pm), the total required time is 15 hours. The required personnel for the day shift should be  $15.00 / 8 = 1.88$  officers.

Again, we add an additional 33% time block to account for the administrative tasks. Thus, the required personnel for the day shift becomes  $(1.88 * 0.33) + 1.88 = 2.50$ . In other words, by rounding up, three police officers will be enough to clear calls for service for Silverton/Sycamore during the day shift with no other proactive or undedicated time.

If Silverton/Sycamore Township wanted to continue contracting for police services, 2 night-shift officers and 3 day-shift officers could clear all citizen calls for service during their respective

shift. This does not take into account how multiple officer calls are handled nor do we make any inference or recommendation on how HCSO determines the number of officers they need to provide this level of service or how that cost is calculated.

### **Scenario 2: Add Proactive Activities to HCSO Contract**

Silverton/Sycamore could contract with the HCSO for policing services and include some undedicated proactive policing time into the scope of services or agreement. Based on the 50% and 33% obligated time model for answering calls for service, 4 patrol officers for the day shift and 3 patrol officers for the night shift could answer all calls for service. This scenario only provides a minimal amount of undedicated or proactive officer time.

### **Scenario 3: Form a Joint Police Department**

Lastly, Silverton/Sycamore could form a joint police department. The minimum staffing for patrol *only*, using the numbers from scenario 2 above, would be 4 officers for day shift and three officers for night shift given minimal proactive patrol activity, problem solving, or other community policing activities. However, one must take into account off days since officers do not work 7 days per week so each shift would require 2 squads for a total of 14 patrol units. Also keep in mind that the number of officers will need to be increased if an agency decides to provide policing services within the IACP or ICMA guidelines for proactive or undedicated patrol time in order to engage in problem solving, community policing activities or other proactive measures as well as providing needed supervision.

Also, if Silverton/Sycamore had a joint police department, the total number of officers required would be more than the minimum number of patrol only officers needed to answer citizen calls for service. The actual number of sworn personnel needed for a full service police department, would be higher to take into account administration (a chief of police), supervision (mid-level command staff), and various support functions such as detectives as well as replacing officers (if desired) that may not be available for a scheduled shift due to vacation, illness, etc.

Most police departments in the United States assign one investigator/detective for every 200-300 Part 1 crimes. The combined number of Part 1 crimes in Silverton and Sycamore in 2017 was 1,295. Using the national average, a combined Silverton/Sycamore agency could have up to 4 investigators/detectives.

Typically, the national average for a supervisor to patrol officer ratio is 2.4 for all law enforcement agencies. Using this average, a combined Silverton/Sycamore agency should have 4 supervisors.

Add a Chief to these positions and the total minimum number of sworn positions would be 23 for a combined agency, with a small amount of unobligated patrol time to engage in proactive policing activities.

Table 9 below shows the Staffing scenarios from the above analysis and discussion.

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#### **Table 9. Minimum Staffing Requirements for Three Scenarios**

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Scenario 1		Scenario 2		Scenario 3		
Shift	Officers	Shift	Officers	Squad	Shift	Officers
Day Shift	2	Day Shift	4	A Squad	6am -6pm	4
Night Shift	3	Night Shift	3	B Squad	6pm - 6am	3
				C Squad	6am -6pm	4
				D Squad	6pm - 6am	3
				Chief		1
				Supervisors		4
				Investigators		4

## Recommendations

If power shift cars are used, ensure the hours of work for power shift cars are determined using calls for service data, including the times when multiple officer dispatches occur more frequently. Based on information in Table 3 above, ICS recommends power shift hours of 10:00 AM to 7:00 PM to coincide with the highest call volume.

Silverton and Sycamore should engage its citizens in determining the level and type of services it desires from the HCSO and communicate those service level desires to HCSO. The type and level of service has a direct impact on staffing needs. This staffing analysis only recommended the staffing level required to answer citizen calls for service with little or no other proactive time such as problem solving, community-based programs, etc.

If Silverton and Sycamore were to have their own joint police department, the level and type of services desired by the community will have a direct impact on the size of the agency. All decision makers and community members must be aware of how staffing demands change in relation to proactive and community-based programs.

Determine how much non-obligated, or pro-active patrol time is desired for patrol officers (pro-active time target) and mandate specific activities for that unencumbered time. Adopt a formal problem-oriented policing approach (See Appendix B for more details about problem-oriented policing).

Determine how many calls for service in Silverton and Sycamore are answered by other HCSO contract cars from neighboring communities or by an HCSO unit assigned to the east side district of Hamilton County and determine how many times a Silverton unit and Sycamore unit answers calls for service outside of Silverton and Sycamore jurisdictional boundaries.

Recommend that HCSO work together with representatives from the Kenwood Towne Center to develop a comprehensive response plan for calls for service and criminal incidents. The Towne Center accounted for nearly 62% of Sycamore's property crime and nearly 10% of all of Sycamore's total calls for police service. Also, a plan should be developed to address traffic incidents on the Kenwood Road and Montgomery Road corridors. Traffic-related calls for service take the most time to resolve, despite being ranked second in total number of calls for police service.

Regularly meet with HCSO staff assigned to oversee operations in Silverton and Sycamore to ensure appropriate delivery of policing services. All parties should use high quality data to help inform both decision making and ensure that assigned officers are deployed with a purpose so that time not spent answering calls for service (proactive time) is productive and is being properly used to maximize the benefit to Silverton and Sycamore.

Ensure that robust, accurate data is gathered for all police activity in Silverton and Sycamore to enable proper crime analysis, pattern and trend identification and deployment of resources. (See list below). Because the HCSO does not have an electronic Records Management System (RMS), consider using a local data collection system to allow for easier access and retrieval of information specific to Silverton and Sycamore but with the possibility of data sharing with surrounding jurisdictions.

ICS recommended specific incident data for all Part I crime reports, including:

- Address of offense, including zip code, jurisdiction, and X, Y coordinates if available.
- Unique incident number
- Date of offence
- Time of offence
- UCR Code for offence

## Appendix A. Silverton and Sycamore Citizen Initiated CFS in 2017

<i>CFS Type</i>	<i>Number of CFS</i>	<i>Total Minute Spent in a Year</i>	<i>Total Hour Spent</i>
<i>A/A-Advise On Injury</i>	154	10079.2	168.0
<i>A/A-Animal Struck</i>	21	780.4	13.0
<i>A/A-Building Struck (PD)</i>	3	261.6	4.4
<i>A/A-Entrapment (PD)</i>	13	2983.6	49.8
<i>A/A-Fire/Fuel Leak (PD)</i>	4	227.3	3.8
<i>A/A-Fire/Fuel Leak w/Inj (PD)</i>	2	198.4	3.3
<i>A/A-Hit Skip</i>	95	4833.6	80.5
<i>A/A-Injury (PD)</i>	125	13953.9	232.5
<i>A/A-Pedestrian Struck (PD)</i>	8	662.5	11.0
<i>Abandoned Veh</i>	111	1820.8	30.3
<i>Abdominal Pain (PD)</i>	94	1053.8	17.6
<i>Abduction</i>	3	189.2	3.2
<i>All County Broadcast</i>	7	193.7	3.2
<i>Allergic Reaction (PD)</i>	22	204.8	3.4
<i>Animal Bite (PD)</i>	4	98.6	1.6
<i>Animal Complaint</i>	165	3221.0	53.6
<i>Appliance Fire (PD)</i>	8	262.2	4.3
<i>Assault In Progress</i>	23	2002.5	33.3
<i>Assault-Injury (PD)</i>	19	1885.6	31.4
<i>Attempt To Locate</i>	64	1909.4	31.8
<i>Attempt/Threat Suicide (PD)</i>	85	7420.9	123.6
<i>Audible Alarm</i>	31	512.3	8.5
<i>Auto Accident</i>	907	36968.9	616.2
<i>Auto Theft</i>	10	1488.1	24.8
<i>Back Pain (PD)</i>	43	585.3	9.7
<i>Barking Dog</i>	37	629.9	10.5
<i>Be On Lookout For</i>	733	7086.9	118.1
<i>Bomb Threat/Device (PD)</i>	2	347.3	5.8
<i>Brush/Mulch/Field Fire (PD)</i>	8	193.9	3.2
<i>Burglary In Progress</i>	86	5561.2	92.7
<i>Check On Well Being</i>	206	6737.7	112.3
<i>Chest Pain (PD)</i>	220	3120.0	52.0
<i>Child/Juvenile Endangered</i>	34	703.6	11.7
<i>Choking (PD)</i>	8	128.6	2.1
<i>CO Alarm (PD)</i>	32	375.1	6.2
<i>CO Alarm-Illness (PD)</i>	2	39.7	0.7
<i>Criminal Damaging In Progress</i>	15	1132.8	18.9
<i>Critical Missing Adult</i>	24	2002.8	33.4
<i>Dead Animal In The Road</i>	22	332.9	5.5
<i>Debris In The Road</i>	184	3200.1	53.3
<i>Diabetic Emergency (PD)</i>	72	1350.8	22.5

<i>Disabled Vehicle</i>	381	9919.4	165.3
<i>Disorderly Crowd</i>	2	50.9	0.8
<i>Disorderly Juveniles</i>	35	540.8	9.0
<i>Disorderly Person</i>	4	149.0	2.5
<i>Domestic Trouble</i>	389	27075.7	451.3
<i>Drug Violation</i>	63	1728.6	28.8
<i>Dumpster Fire (PD)</i>	3	80.1	1.3
<i>Electrical Fire (PD)</i>	9	161.6	2.7
<i>Elevator Alarm-Rescue (PD)</i>	11	150.4	2.5
<i>Emergency To Property (PD)</i>	15	218.2	3.6
<i>EMS Lift Assist (PD)</i>	232	2400.0	40.0
<i>Eye Injury (PD)</i>	2	17.9	0.3
<i>Failure To Pay Just Occurred</i>	12	1375.8	23.0
<i>FD General Resp (PD)</i>	27	353.6	5.9
<i>Fight In Progress</i>	26	1495.0	24.9
<i>Fire Alarm (PD)</i>	282	2195.3	36.6
<i>Fireworks Complaint</i>	36	365.9	6.1
<i>Fuel Spill (PD)</i>	5	111.7	1.9
<i>Go To Your Station</i>	2	28.8	0.4
<i>Head Injury (PD)</i>	271	3795.6	63.2
<i>Headache (PD)</i>	9	50.3	0.8
<i>Hemorrhaging (PD)</i>	66	804.1	13.4
<i>High Fever (PD)</i>	26	247.0	4.1
<i>High Water</i>	5	331.6	5.5
<i>Holding A Shoplifter</i>	50	5094.3	84.9
<i>Holdup Alarm</i>	61	1157.9	19.3
<i>Hyperthermia (PD)</i>	3	23.5	0.4
<i>Information Incident</i>	263	2662.3	44.3
<i>Injured Animal</i>	45	1023.8	17.0
<i>Injured Person (PD)</i>	60	952.9	15.8
<i>Injury From A Fall (PD)</i>	446	5958.3	99.3
<i>Intrusion Alarm</i>	1176	21690.8	361.6
<i>Intrusion Alarm-No Code</i>	59	753.4	12.5
<i>Investigate (See Comments)</i>	53	1186.6	19.8
<i>Investigate Shots Fired</i>	42	1791.9	29.9
<i>Juvenile Complaint</i>	33	900.9	15.0
<i>Laceration (PD)</i>	15	447.7	7.5
<i>Lock Out Assist</i>	122	2146.4	35.8
<i>Loud Music</i>	64	1230.6	20.6
<i>Loud Party</i>	24	437.2	7.3
<i>Maternity Run (PD)</i>	9	160.0	2.7
<i>Medical Alarm (PD)</i>	88	982.4	16.4
<i>Meet An Officer</i>	12	747.7	12.5
	1	0.1	0.0
<i>Miscarriage (PD)</i>	6	64.9	1.1
<i>Missing Child</i>	28	2156.7	35.9

<i>Neighbor Trouble</i>	46	2273.0	37.8
<i>Noise Complaint</i>	61	866.7	14.5
<i>Non-Breather/Cardiac Arr (PD)</i>	92	14715.6	245.2
<i>Odor Of Natural Gas (PD)</i>	40	545.4	9.1
<i>Officer Needs Assistance</i>	1	15.9	0.3
<i>Open Burn (PD)</i>	19	218.2	3.6
<i>Overdose (PD)</i>	39	3348.8	55.9
<i>OVI Being Followed</i>	18	1253.0	20.9
<i>Panic Alarm</i>	93	1344.8	22.5
<i>Parking Violation</i>	125	2100.4	35.0
<i>Person With A Gun</i>	35	6225.5	103.8
<i>Person With A Knife</i>	6	1601.8	26.7
<i>Person With A Weapon</i>	5	951.9	15.9
<i>Pick Up A Prisoner</i>	5	678.8	11.3
<i>Place Found Open</i>	51	1330.9	22.2
<i>Poisoning (PD)</i>	7	136.9	2.2
<i>Pole/Transformer Fire (PD)</i>	9	342.0	5.7
<i>Possible Heart Attack (PD)</i>	88	1136.5	18.9
<i>Prowlers</i>	35	1919.4	32.0
<i>Psychiatric Emer (PD)</i>	99	6345.3	105.7
<i>Reckless Operator</i>	41	504.5	8.4
<i>Recorded Elevator Alarm (PD)</i>	53	528.4	8.8
<i>Recorded Fire Alarm (PD)</i>	1	0.3	0.0
<i>Recorded Intrusion Alarm</i>	13	138.6	2.3
<i>Recorded Panic Alarm</i>	2	2.0	0.0
<i>Repo Vehicle Information</i>	106	328.8	5.5
<i>Report</i>	115	3378.8	56.3
<i>Report-Animal Bite</i>	6	241.9	4.0
<i>Report-Assault</i>	30	2128.8	35.5
<i>Report-Auto Accident</i>	136	3465.0	57.7
<i>Report-Auto Theft</i>	72	3162.6	52.7
<i>Report-Bad Check</i>	18	585.6	9.8
<i>Report-Burglary</i>	61	2927.5	48.8
<i>Report-Found Property</i>	49	1278.1	21.3
<i>Report-Harassment/Threats</i>	97	3008.6	50.2
<i>Report-Lost Property</i>	11	260.4	4.3
<i>Report-Missing Person</i>	9	407.0	6.8
<i>Report-Phone Harr/Threats</i>	48	1488.4	24.8
<i>Report-Property Damage</i>	160	4238.4	70.6
<i>Report-Supplemental</i>	44	1350.3	22.5
<i>Report-Theft</i>	508	16101.5	268.4
<i>Robbery In Prog/Just Occurred</i>	12	3416.4	56.9
<i>See Compl At Station</i>	136	3647.5	60.7
<i>See Complainant</i>	152	4419.3	73.7
<i>See Comp-Ref Suspicious Item</i>	6	104.6	1.8
<i>See Key Holder</i>	4	69.3	1.2
<i>Seizures (PD)</i>	109	2211.9	36.9

<i>Sexual Assault</i>	4	660.8	11.0
<i>Shooting (PD)</i>	4	6528.2	108.8
<i>Sick Person (PD)</i>	644	8613.5	143.5
<i>Silent E911 Call</i>	109	1563.9	26.1
<i>Smoke/Odor Indoors (PD)</i>	16	286.3	4.8
<i>Smoke/Odor Outdoors (PD)</i>	10	132.3	2.2
<i>SPCA Respond/Call</i>	38	314.8	5.3
<i>Stroke (PD)</i>	80	1011.4	16.9
<i>Structure Fire (PD)</i>	27	4244.9	70.7
<i>Suspicious Person</i>	418	10109.0	168.5
<i>Suspicious Vehicle</i>	86	2541.5	42.3
<i>Suspicious Veh-Occupied</i>	218	5568.0	92.8
<i>Telephone Call</i>	1107	5273.6	87.9
<i>Theft In Prog/Just Occ</i>	132	12507.8	208.5
<i>Traffic Hazard</i>	74	1895.8	31.6
<i>Traffic Light Malfunction</i>	26	193.4	3.2
<i>Trbl-Cell Phone GPS Location</i>	42	1265.4	21.0
<i>Trespassers</i>	29	1026.1	17.1
<i>Trouble</i>	192	11020.2	183.7
<i>Trouble Breathing (PD)</i>	357	4959.6	82.7
<i>Trouble Brewing</i>	188	9790.4	163.2
<i>Trouble W/A Customer</i>	109	4908.7	81.8
<i>Trouble W/An Employee</i>	26	956.0	16.0
<i>Unconscious (PD)</i>	249	8900.0	148.3
<i>Unknown Trouble</i>	49	3365.3	56.1
<i>Vehicle (GPS) Alarm</i>	9	67.6	1.1
<i>Vehicle Fire (PD)</i>	28	1396.5	23.2
<i>Vehicle Tampering</i>	18	959.5	15.9
<i>Wanted Person</i>	57	4258.8	71.0
<i>Water Flow Alarm (PD)</i>	16	109.6	1.8
<i>Wires Down/Arcing/Fire (PD)</i>	43	2316.6	38.6

## Appendix B. The Key Elements of Problem-Oriented Policing

- A problem is the basic unit of police work rather than a crime, a case, calls, or incidents.
- A problem is something that concerns or causes harm to citizens, not just the police. Things that concern only police officers are important, but they are not problems in this sense of the term.
- Addressing problems means more than quick fixes: it means dealing with conditions that create problems.
- Police officers must routinely and systematically analyze problems before trying to solve them, just as they routinely and systematically investigate crimes before making an arrest. Individual officers and the department as a whole must develop routines and systems for analyzing problems.
- The analysis of problems must be thorough even though it may not need to be complicated. This principle is as true for problem analysis as it is for criminal investigation.
- Problems must be described precisely and accurately and broken down into specific aspects of the problem. Problems often aren't what they first appear to be.
- Problems must be understood in terms of the various interests at stake. Individuals and groups of people are affected in different ways by a problem and have different ideas about what should be done about the problem.
- The way the problem is currently being handled must be understood and the limits of effectiveness must be openly acknowledged in order to come up with a better response.
- Initially, any and all possible responses to a problem should be considered so as not to cut short potentially effective responses. Suggested responses should follow from what is learned during the analysis. They should not be limited to, nor rule out, the use of arrest.
- The police must pro-actively try to solve problems rather than just react to the harmful consequences of problems.
- The police department must increase police officers' freedom to make or participate in important decisions. At the same time, officers must be accountable for their decision-making.
- The effectiveness of new responses must be evaluated so these results can be shared with other police officers and so the department can systematically learn what does and does not work. (Michael Scott and Herman Goldstein 1988.)

The concept of problem-oriented policing can be illustrated by an example. Suppose police find themselves responding several times a day to calls about drug dealing and vandalism in a neighborhood park. The common approach of dispatching an officer to the scene and repeatedly

arresting offenders may do little to resolve the long-term crime and disorder problem. If, instead, police were to incorporate problem-oriented policing techniques into their approach, they would examine the conditions underlying the problem. This would likely include collecting additional information—perhaps by surveying neighborhood residents and park users, analyzing the time of day when incidents occur, determining who the offenders are and why they favor the park, and examining the particular areas of the park that are most conducive to the activity and evaluating their environmental design characteristics. The findings could form the basis of a response to the problem behaviors. While enforcement might be a component of the response, it would unlikely be the sole solution because, in this case, analysis would likely indicate the need to involve neighborhood residents, parks and recreation officials and others.

Problem-oriented policing can be applied at various levels of community problems and at various levels in the police organization. It can be applied to problems that affect an entire community, involving the highest level of police agency, government, and community resources. It can be applied at intermediate levels (for example, a neighborhood or a police district), involving an intermediate level of resources. Or it can be applied at a very localized level (for example, a single location or a small group of problem individuals), involving the resources of only a few police officers and other individuals.

## **Appendix C:**

### **Brief Synopsis of Part I Crime in the Village of Silverton and Sycamore Township**

#### **Overview**

The Village of Silverton and Sycamore Townships are located in Hamilton County, Ohio. The Village of Silverton is a small first ring suburb of Cincinnati. Silverton spans slightly more than one square mile and includes approximately 2,500 buildings and 183 streets. Silverton had about 5,000 residents in 2015, approximately half of which are black and the other half are white. The median household income is approximately \$37,000, which is lower than estimates for both the County and State. Like Sycamore Township, about 10% of the Silverton population is living below the poverty line.

Sycamore Township is adjacent to Silverton. The land mass of Sycamore Township is split among three “islands” which are also surrounded by other Hamilton County townships. In total, Sycamore Township is 6.7 square miles, and includes about 9,500 buildings and 830 streets. Sycamore Township houses Hamilton County’s biggest shopping center (Kenwood Towne Center). According to the U.S. Census 2015 estimates, Sycamore Township has approximately 19,300 residents, most of which are white (79%). The median household income is approximately \$65,000 and less than 10% of the population lives in poverty, which are both more positive than current statistics for the County and State.

#### **Part I Crime**

Crime is highly concentrated in a small number of places. Research has suggested that approximately 25% of crime is concentrated in 1% of places and 50% of crime is concentrated in 5% of places (Weisburd, 2015); however, few studies have examined the trend in suburban or rural jurisdictions. Between January 1, 2017 and December 31, 2018, there were 175 Part I offenses in Silverton (3500 per 100,000 people) and 1,120 Part I offenses in Sycamore Township (5803 per 100,000 people)<sup>7</sup>. These offenses were primarily property crimes, particularly theft offenses.

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<sup>7</sup> These numbers were slightly different from the raw data in that the ICS data presented has removed duplicate cases and relies on valid street addresses. Overall, there was a 98.8% match rate.

**Table 1** below displays the distribution of Part I crime between 2017 and 2018 in Sycamore and Silverton. Unlike the Law of Concentration approximations, crime was more tightly concentrated in Sycamore and Silverton than those reported in research, which tends to be in bigger cities.

In Sycamore Township, all of the property offenses occurred in only 3 percent of Sycamore's addresses and all violent offenses (n = 40) occurred in less than 0.5 percent of addresses. In addition, there was one address (7875 Kenwood Road) that accounted for nearly 62 percent of Sycamore's property crime. This address is the most commonly used address for the Kenwood Towne Center despite having multiple official addresses.

In Silverton, all property crime was concentrated in 4.4 percent of addresses, while all the violent crime was concentrated in less than 1 percent of addresses. One Silverton address (7314 Montgomery Road) accounted for 5.5 percent of all of Silverton's property crime. This address houses a CVS Pharmacy and is located in Silverton's small central business district.

**Table 1. Cumulative Distribution of Crime at Address-Level, January 1, 2017 - December 31, 2018**

	Sycamore Township			Sycamore Township			Silverton			Silverton		
	Part 1 Property Crime			Part 1 Violent Crime			Part 1 Property Crime			Part 1 Violent Crime		
No. of offenses	No. of streets	cumulative % offenses	cumulative % places	No. of streets	cumulative % offenses	cumulative % places	No. of streets	cumulative % offenses	cumulative % places	No. of streets	cumulative % offenses	cumulative % places
0	9,196	--	100.00%	9,481	--	100.00%	2,460	--	100.00%	2,561	--	100.00%
1	253	100.00%	3.30%	25	100.00%	0.30%	90	100.00%	4.40%	12	100.00%	0.50%
2	36	76.60%	0.60%	2	37.50%	0.04%	11	44.80%	0.90%			
3	10	69.90%	0.30%	0	27.50%	0.02%	4	31.30%	0.50%			
4	0	67.10%	0.20%	1	27.50%	0.02%	5	23.90%	0.30%			
5	3	67.10%	0.20%	0	17.50%	0.01%	2	11.70%	0.10%			
6	1	65.70%	0.10%	0	17.50%	0.01%	0	5.50%	< 0.01%			
7	1	65.20%	0.10%	1	17.50%	0.01%	0	5.50%	< 0.01%			
8	0	64.50%	0.10%				0	5.50%	< 0.01%			
9	1	64.50%	0.10%				1	5.50%	< 0.01%			
10	2	63.70%	0.10%									
>= 11	7	61.90%	0.10%									
<b>Sum of offenses</b>	<b>1,080</b>			<b>40</b>			<b>163</b>			<b>12</b>		

Note: There were seven streets in Sycamore Township with 11 or more offenses, with a maximum of 519 offenses.

## Location of Crime Concentrations

In both jurisdictions, crime was concentrated at a small number of places. The crime hot spots concentrated in certain sections of each jurisdiction, and on specific streets, in specific buildings. **Error! Reference source not found.** and Table 3 display the ten streets in each jurisdiction that contain the most crime. In addition, specific high-crime facilities on each of these street segments are identified; if none are listed, crime is dispersed among multiple addresses on the street. Note that many of these facilities' streets do not correspond with the listed street segments. To clarify these concentration and limitations, Figure 1 and Figure 2 below display the geographic distribution of crime at facilities and streets in the same map.

By focusing on specific "hot" streets or facilities, the communities can have the largest impact on crime using the fewest amount of resources. Crime prevention theories put forth that crimes occur when criminal opportunities are available. Much like law-abiding citizens, offenders travel similar routes and frequent particular places throughout their day; their lives are highly patterned. When offenders travel, they search for criminal opportunities, which arise when they encounter suitable targets in situations that lack capable guardianship. Crime concentrations tend to occur in busy places that bring together many people, as offenders can take advantage of the abundance of targets, or in places that are known for having many criminal opportunities.

Several factors can impact whether an offender considers a place suitable for committing crime, and their engagement in crime is largely guided by the situation directly preceding their criminal act. Situations that have higher perceived risks, lower perceived rewards and those that require more effort are less likely to be taken advantage of. As such, situational cues either encourage or discourage crime. In addition to situational cues, some neighborhoods have a breakdown of social control. These neighborhoods are those that no longer trust their neighbors or the police, thus failing to call the police or intervene in their communities when criminal incidents occur. The breakdown of social control is often the result of historic or systemic crime problems. Due to the rooted issues, their crime prevention solutions tend to require reversing the longstanding distrust, through community-based interventions.

Below, in Tables 2 and 3, are highlighted facilities that contribute to crime in Silverton and Sycamore Township:

**Table 2. Hot Streets in Sycamore Township; January 1, 2017 - December 31, 2018**

Street Segment	Driving Facility	Property	Violent	Total Part 1 Crime
7801 - 7948 Montgomery Rd	7875 Montgomery Rd (Kenwood Towne Center)	592	7	599
7713 - 7798 Montgomery Rd	7788 & 7714 Montgomery Rd (Kenwood Mall)	34	2	36
4800 - 6149 E Galbraith Rd	5901 E Galbraith Rd (Kenwood Mall)	32	2	34
6744 - 7301 Dearwester Dr	7300 Dearwester Rd (Shopping Center)	24	0	24
8101 - 8198 Montgomery Rd	8129 Montgomery Rd (LA Fitness)	17	1	18
7476 - 7729 School Rd	7501 School Rd (Village Green)	14	3	17
8001 - 8098 Montgomery Rd	8051 & 8063 Montgomery Rd	16	0	16
7587 - 7998 Kenwood Rd		13	0	13
3970 - 4099 E Galbraith Rd	4090 E Galbraith Rd	10	1	11
10753 - 10850 Montgomery Rd		9	2	11
4700 - 4799 E Galbraith Rd	4777 E Galbraith Rd (The Jewish Hospital)	11	0	11
<b>Total</b>		<b>772</b> <b>(68.9%)</b>	<b>18</b> <b>(41.9%)</b>	<b>790</b> <b>(67.9%)</b>

*Note: Hot streets were calculated by joining crime locations to the nearest street segment. In some cases, an offense was joined to a different street, despite the offense address being located at an adjacent street.*

**Table 3. Hot Streets in Silverton Township; January 1, 2017 - December 31, 2018**

Street Segment	Driving Facility	Property	Violent	Total Part 1 Crime
7031 - 7044 Montgomery Rd	7043 Montgomery Rd (UDF)	13	1	14
7301 - 7328 Montgomery Rd	7314 Montgomery Rd (CVS Pharmacy)	10	1	11
3900 - 3999 E Gatewood Ln	Gateway Apartments	11		11
6817 - 6924 Montgomery Rd		9	1	10
7401 - 7426 Montgomery Rd		8	1	9
6925 - 6954 Montgomery Rd		7		7
6901 - 6998 Plainfield Rd		6		6
7001 - 7008 Ohio Av		5	1	6
6901 - 6926 Ohio Av	6922 Ohio Ave	5		5
6701 - 6738 Montgomery Rd		5		5
<b>Total</b>		<b>79</b> <b>(43.2%)</b>	<b>5</b> <b>(38.5%)</b>	<b>84</b> <b>(42.9%)</b>

*Note: Hot streets were calculated by joining crime locations to the nearest street segment. In some cases, an offense was joined to a different street, despite the offense address being located at an adjacent street.*

## *Sycamore Township*

**Kenwood Town Center** is made of a handful of unique addresses, ranging along Montgomery, Galbraith, and Kenwood Roads. All offenses included some form of trespassing or theft, including breaking and entering, larceny/theft, or robbery. There are over 100 addresses attached to the Kenwood Towne Center with at least one offense in 2017 or 2018. However, even within the mall there are a small number of stores responsible for the most crime. The five most crime-prone store fronts are associated with almost half of the Part I crime at Kenwood Towne Center, and are as follows: Macy's (n=82), Dillard's (n = 63), Sunglass Hut (n = 26), Ilori (n = 26), and Zumiez (n = 26). These high-crime stores are likely the result of criminogenic situational cues, and may be corrected by addressing the risk, reward, or guardianship.

**Village Green** is a mobile home park located at 7501 School Road. While there are two street segments that have more crime than their street, this was an interesting "hot street" because it was not simply the result of theft at a specific address. Instead, there was a wide range of crime types (burglary, theft, rape, robbery, and a host of Part II criminal offenses). While domestic violence did not concentrate as heavily as is typical in larger cities, this area had multiple, repeat domestic-related incidents. The criminal opportunity at this location is likely the result of low community engagement and social control. It presents very challenging crime problems because the crimes are not simply the result of the lack of cameras or police presence in the area.



## *Silverton*

**Gatewood Lane Apartments** are single-family apartments located on a stretch of Gateway Lane and Ohio Avenue. The 3900 block of Gateway Lane is one of the most crime prone street segments in Silverton, with 11 property offenses between 2017 and 2018, including 5 burglaries and 6 thefts. There is not a single address responsible for all or most offenses, instead it is distributed among the community with 7 unique addresses being targeted for a Part 1 property crime. There were 15 unique addresses on Gatewood Lane that were targeted for any offense in 2017 or 2018 (Part I and Part II). Like the issues Sycamore Township is facing with the Village Green Mobile Home Park, the crime appears to be longstanding and related to neighborhood social dynamics, including low social control. These issues are more challenging due to their longstanding social nature.



**United Dairy Farmers and CVS Pharmacy** are the two crime-prone facilities that drive crime at their respective street segments. Both have similar dynamics and issues seen in other jurisdictions, like Cincinnati. Between 2017 and 2018, there were 13 thefts and 1 robbery at the CVS Pharmacy and 10 thefts and 1 robbery at the United Dairy Farmers. Crime at these locations is likely the result of plentiful criminal opportunity. Both locations are convenience stores whose goal is to make quick shopping trips accessible and fast for customers.

Unfortunately, this also makes it fast and convenient for thieves. Increasing the risk or likelihood of getting caught can greatly reduce crime at these locations. Therefore, crime prevention tends to be easier than at other places, provided the police can partner with place managers. It requires finding the vulnerabilities that create criminal opportunities and quickly addressing them.

Figure 1. Distribution of Part I Crime, Sycamore Township

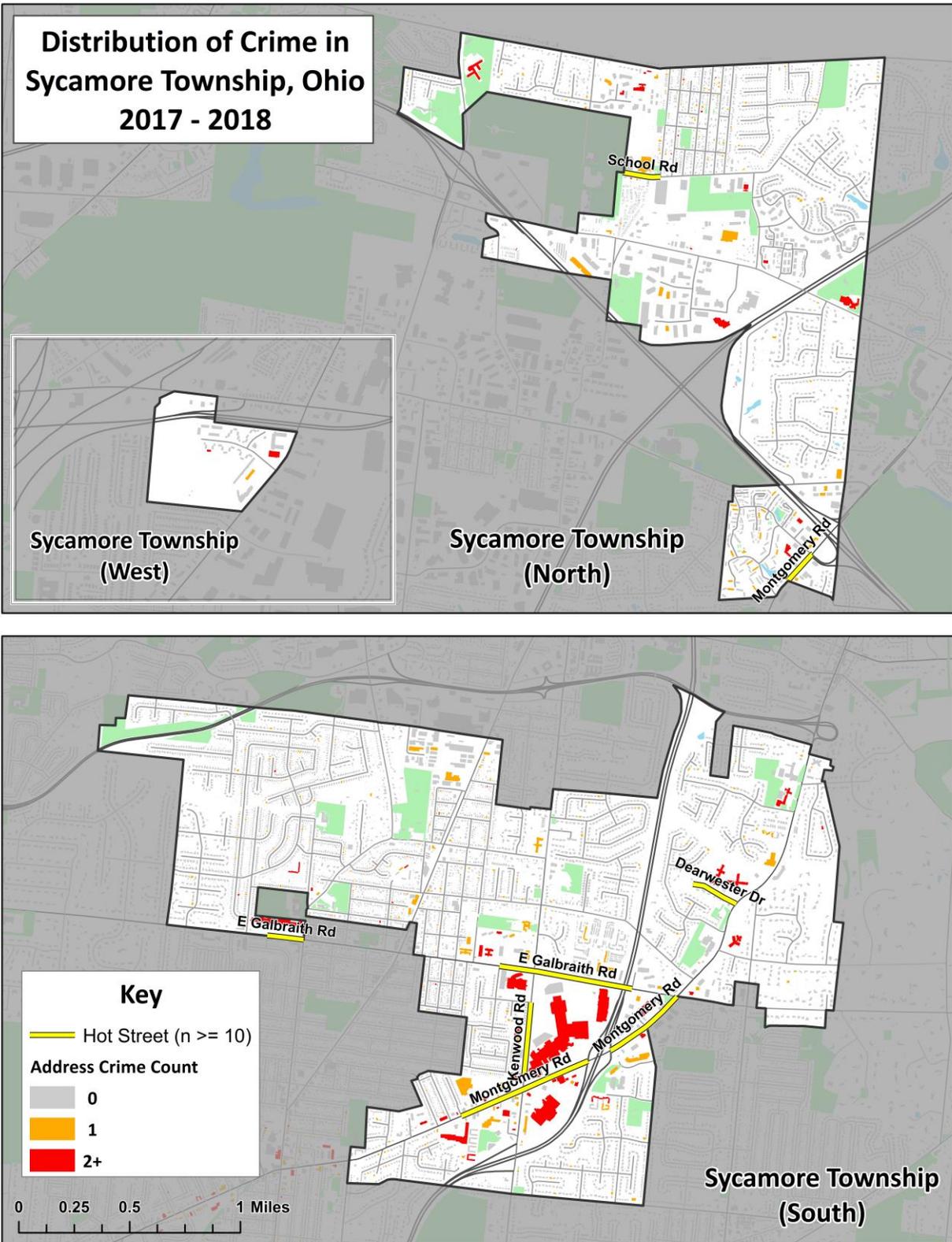


Figure 2. Distribution of Part I Crime, Silverton Ohio

