



Farmers Branch Police Department

Five-Year Strategic Staffing Plan

Final Report

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In September 2016, the Farmers Branch Police Department (FBPD) contracted with the University of North Texas for the development of a five-year strategic staffing plan. The impetus for this staffing assessment and projection is to understand both the current and future staffing needs of FBPD as the City of Farmers Branch is expected to experience significant population growth over the next several years. According to a 2016 Farmers Branch City Council Retreat PowerPoint presentation received by the research team, the City of Farmers Branch had a population of 30,124 in 2015. According to an October 2016 presentation given to FBPD supervisors by Andy Gilles, City of Farmers Branch Director of Planning, the City of Farmers Branch is expected to have a residential population in excess of 40,000 in 2020. This equates to an approximately 33% increase in population in five years. As illustrated, the City of Farmers Branch is expected to experience significant population growth over the next 5 years which will impact the law enforcement services provided to the community by FBPD.

Various methodologies were employed during the study including discussions with FBPD personnel. Several interviews were completed by the author with FBPD personnel on September 26th and September 29th. A list of the interviews is presented below.

- Chief Hale

Patrol Division

- Deputy Chief Habel
- Lt. Lee, First Watch Patrol
- Lt. Siegel, Second Watch Patrol
- Lt. Damours, Third Watch Patrol
- Lt. Dyer, Fourth Watch Patrol
- Sgt. Sikorsky, First Watch Patrol
- Sgt. Burton, Second Watch Patrol
- Sgt. McCain, Third Watch Patrol

Support Services Division

- Deputy Chief Young
- Lt. Ashabranner, Jail Division
- Lt. Foxall, Criminal Investigations Division
- Lt. Stokes, Special Investigations Division, Internal Affairs, and Records
- Sgt. Bratcher, Vice/Narcotics Section
- Sgt. Eoff, Youth Services Section
- Sgt. Hairston, Training Division
- Sgt. Taylor, Criminal Investigations Division
- Officer Spencer, Jail Team Leader
- Officer Whitmire, Jail Team Leader

In addition to the interviews, the research team conducted a comprehensive analysis of existing departmental and city data and reports, assessment of national best practices applicable to FBPD, and the development of statistical models to validate and project staffing needs. The project team was tasked with developing a five-year strategic staffing plan for FBPD.

This report is structured in six primary sections and provides the reader with data, information, and analysis that lead to recommendations relevant to the strategic staffing plan of the Farmers Branch Police Department. Every FBPD division and section were assessed during the study, but only those divisions and sections needing additional personnel over the next five years will be discussed in this report. If a FBPD section is not discussed in this report, then the findings of the research team indicate that the staffing levels of the section are sufficient for the next five years.

The six sections are as follows:

- **Section I: Patrol Division Staffing;**
- **Section II: Strategic Staffing Plan – Staffing the Patrol Function;**
- **Section III: Patrol Division Staffing – Additional Staffing Needs;**
- **Section IV: Support Services Division Staffing;**
- **Section V: Additional Staffing Needs; and,**
- **Section VI: Summary of Staffing Recommendations.**

SECTION I: PATROL DIVISION STAFFING

This section of the report specifically focuses on the uniformed patrol function within the FBPD Patrol Division and the number of patrol officers needed over the next five years. Table 1 illustrates the current patrol staffing levels within the division. There are currently 41 authorized patrol officers (n=37) and corporals (n=4) in the FBPD Patrol Division.

Table 1 – Patrol Division Staffing

Position	Classification	Authorized Personnel
Patrol Officers and Corporals	Sworn	41
		Total: 41

MODELING PATROL STAFFING NEEDS

The primary issue addressed in this section of the report focuses on the question: How many sworn police officers should be assigned to patrol in the Farmers Branch Police Department (FBPD) through fiscal year 2021-22?

The methodology employed to answer the above question was the use of the Model for the Allocation of Patrol Personnel (MAPP). MAPP is a validated allocation model created by the author and has been successfully used in other cities and jurisdictions to accurately project the number of officers required in patrol, utilizing variable service level schemes and performance objectives.¹

The MAPP is designed to determine the number of officers that need to be assigned to patrol based on established performance objectives. The model first determines the number of officers needed to answer calls for service and then builds upon that number to ensure that enough officers are assigned to patrol so that performance objectives can be met. There are six performance objectives for patrol used in this model. Each is discussed below.

¹ The original version of MAPP was built and tested by the author in 2000. Earlier versions of the model were featured in the Executive Issues Seminar Series which was sponsored by the Bill Blackwood Law Enforcement Management Institute of Texas as well as training provided by the Illinois Law Enforcement Training and Standards Board. Most recently, the MAPP was utilized in comprehensive staffing studies for the Allen TX, Anaheim CA, Denton, TX, DeSoto TX, El Paso TX, Elk Grove CA, Eugene OR, Fullerton CA, McKinney TX, Midlothian TX, Richardson TX, Riley County KS, Rowlett TX, and Santa Ana CA Police Departments. The web-based MAPP is used by police and sheriff departments throughout the country through an agreement with the University of North Texas. Dr. Fritsch has also authored a book entitled Police Patrol Allocation and Deployment and published by Pearson Prentice Hall, the only book on the market dedicated to the assessment of police patrol staffing issues as well as a research methods book entitled Applied Research Methods in Criminal Justice and Criminology, published by McGraw-Hill.

- **Ability to meet response time goals for Priority 1 calls for service**

It is crucial for FBPD officers to be geographically disbursed throughout the community so they are able to respond rapidly to Priority 1 calls. Priority 1 calls involve crimes in-progress and incidents that put citizens in imminent danger where rapid response matters. These incidents are critical, where minutes, and even seconds, can have a major impact on the outcome of the incident. Rapid response to Priority 1 calls for service can increase the probability of arrest of the suspect at the scene of the offense, decrease injuries suffered by the victim, decrease property loss and destruction, and deescalate the situation due to officer presence. It is imperative in order to meet this objective that officers must be immediately sent to the scene once the dispatcher has obtained sufficient information regarding the nature of the call and that officers respond rapidly. The MAPP takes into account the number of officers that need to be assigned to patrol in order to meet response time goals to Priority 1 calls.

- **Ability to meet response time goals for Priority 2 calls for service**

It is also important for officers to respond quickly to Priority 2 calls to ensure the situation does not escalate into a more serious incident. Therefore, the MAPP takes into account the number of officers that need to be assigned to patrol in order to meet response time goals to Priority 2 calls.

- **Ability to meet response time goals for Priority 3 calls for service**

Although these calls are not as critical, it is also important for officers to be able to respond to Priority 3 calls in a reasonable amount of time primarily for citizen satisfaction purposes. Therefore, the MAPP takes into account the number of officers that need to be assigned to patrol in order to meet the department's response time goal for Priority 3 calls.

- **Having an officer available to immediately respond to an emergency call**

FBPD must have officers available who can immediately respond to an emergency call for service. If all on-duty officers are busy on other calls for service and activities, then the responses to emergency calls will be delayed. In order to ensure sufficient immediate availability, a performance objective is set in the MAPP for the percentage of emergency calls for which there should be at least one officer available to respond. This model then takes that percentage into account in determining the number of officers that need to be assigned to patrol.

- **Visibility of officers**

The public likes to see police officers as they carry out their daily activities. They also like to see police officers in their neighborhoods. It is important for the police to be visible to citizens in order to make citizens feel safe and to deter potential criminal activity. Therefore, the MAPP sets visibility objectives for patrol and determines how many officers need to be assigned to patrol to meet these objectives.

- **Officer Self-Initiated and Administrative Time**

The MAPP also takes into account additional performance objectives that are essential to the patrol function. First, officers are expected to spend a certain percentage of their on-duty time performing self-initiated activities such as enforcing traffic violations, stopping suspicious persons, and patrolling locations known for criminal activity. Second, officers spend a certain percentage of their time on administrative activities as well such as activities related to the start and end of each patrol shift as well as meal breaks. The MAPP accounts for these additional activities performed by officers when determining the number of officers that need to be assigned to patrol.

PURPOSE OF THE BASE MODEL:

ESTABLISHING THE CONCURRENT VALIDITY OF THE MAPP

The initial objective in the modeling process was to develop a valid mathematical model that replicates the 2015 conditions of patrol in FBPD by building a base MAPP. The year 2015 was used for the base modeling process since this was the most recent complete calendar year for which data were available when the project started in September 2016. Validity addresses the accuracy of the modeling process and refers to the extent to which the MAPP is able to measure the 2015 conditions of patrol in FBPD. Although the validity of the MAPP has been demonstrated in prior studies, it is critical to reassess its validity as it applies to FBPD patrol. The validity of the MAPP as it applies to FBPD patrol is tested by building a base MAPP as described in the next section of this report.

By utilizing the data presented in the next section, if the base MAPP, through a complex series of statistical computations and algorithms, can identify the current number of officers assigned to FBPD patrol in 2015, then the concurrent validity of the MAPP is demonstrated. In other words, there is concurrent validity if the number of patrol officers needed in FBPD according to the base MAPP is the same as the number of patrol officers assigned to FBPD at the time of the analysis (i.e., 2015). Concurrent validity is a complex and objective means of determining the validity of the MAPP. As demonstrated in the next section, the research team was successful in building a valid base MAPP and establishing the concurrent validity of the MAPP as it applies to FBPD. Establishing concurrent validity verifies the accuracy of the MAPP and its ability to be used to accurately determine FBPD patrol staffing needs in the future.

BUILDING THE BASE MODEL: MAPP VARIABLES

The initial objective in the modeling process was to build a base MAPP which reflects the current conditions of patrol in FBPD. A total of 37 variables were used in the development of the base MAPP for FBPD. In this section, each of the variables is discussed along with the data assessed to arrive at their values.

Calls for Service and Service Time Variables

The main concept behind the MAPP is to account for all activities performed by FBPD patrol officers and the amount of time it takes to perform these activities. In order to accomplish this, it is necessary to assess calls for service in the City of Farmers Branch.

The data assessed for calls for service include dispatched calls only since data on self-initiated and administrative activities are accounted for in a separate part of the MAPP. The calls for service data were provided to the research team by FBPD personnel and include all calls for service, by priority level, for calendar year 2015 for the primary unit assigned each call. The MAPP input values for calls for service are illustrated in Table 2.

Table 2 –Base MAPP Input Values for Annual Number of Calls for Service by Priority Level

MAPP Variable	2015
Annual Number of Priority 1 CFS	10,630
Annual Number of Priority 2 CFS	2,878
Annual Number of Priority 3 CFS	751
Total	14,259

Service time is calculated based on the elapsed time from when an officer is en route to the scene to when the officer clears the call. It includes the time spent on each call by the primary unit assigned the call. The average service time for calls for service data were provided to the research team by FBPD personnel and include the average service time, by priority level, for calendar year 2015. Table 3 shows the average service time for calls for service for each priority level as entered into the base MAPP.

Table 3 – Base MAPP Input Values for Average Service Time for Calls for Service by Priority Level

MAPP Variable	2015
Average Service Time for Priority 1 Calls	33 minutes, 36 seconds
Average Service Time for Priority 2 Calls	12 minutes, 42 seconds
Average Service Time for Priority 3 Calls	13 minutes, 30 seconds

Call for Service Data – Back-up Units

Since the goal of the MAPP is to account for all patrol activity time, it is necessary to account for the time officers spend backing up other patrol units on calls for service. The back-up unit response data were provided to the research team by FBPD personnel and include all back-up unit responses to calls for service, by priority level, for calendar year 2015. The MAPP input values for back-up unit responses to calls for service are illustrated in Table 4.

**Table 4 – Base MAPP Input Values for Number of Back-up Unit Responses
by Priority Level**

MAPP Variable	2015
Annual Number of Priority 1 Back-up Responses	13,441
Annual Number of Priority 2 Back-up Responses	2,959
Annual Number of Priority 3 Back-up Responses	430

In addition to the number of back-up unit responses, it is necessary to account for the service time of these back-up unit responses as well. Service time for back-up unit responses is calculated based on the elapsed time from when a back-up unit officer is en route to the scene to when the officer clears the call. It includes the time spent on each call by the back-up unit officer(s). The average service time for back-up unit responses data were provided to the research team by FBPD personnel and include the average service time, by priority level, for calendar year 2015. Table 5 shows the average service time for back-up unit responses to calls for service for each priority level as entered into the base MAPP.

**Table 5 – Base MAPP Input Values for Average Service Time for Back-up Unit Responses
by Priority Level**

MAPP Variable	2015
Average Back-up Time for Priority 1 Calls	22 minutes, 48 seconds
Average Back-up Time for Priority 2 Calls	22 minutes, 42 seconds
Average Back-up Time for Priority 3 Calls	23 minutes, 18 seconds

Self-Initiated and Administrative Time Variables

The self-initiated time an officer spends on-duty is also taken into consideration in the development of the MAPP. This includes time in which an officer can target “hot spots,” perform directed patrol activities, participate in community policing and problem solving activities, stop suspicious individuals, and make traffic stops, as well as other activities. In order to build the base MAPP and replicate the 2015 state of affairs in FBPD patrol, the data on the amount of self-initiated time in 2015 in minutes per hour per officer were provided to the research team by FBPD personnel. The research team calculated the percentage of each patrol hour which is spent on self-initiated activities. It was determined that, on average, 30% of each patrol hour is spent on self-initiated activities; 18 minutes per hour per officer (see Table 6).

The MAPP also takes into account the administrative time an officer spends on-duty. Administrative time includes meal breaks, vehicle check/maintenance, briefing/roll call, shift preparation activities as well as end of shift activities, and paperwork that is not completed on calls for service. The data on the amount of administrative time in 2015 in minutes per hour per officer

were provided to the research team by FBPD personnel. The amount of administrative time spent by FBPD patrol officers was 11.24 minutes per hour per officer (see Table 6); 18.73% of each patrol shift.

Table 6 – Base MAPP Input Values for Self-Initiated and Administrative Time

MAPP Variable	2015
Self-Initiated Time in Minutes per Hour per Officer	18.0
Administrative Time in Minutes per Hour per Officer	11.24

Response Time Variables

In order to determine the number of officers needed to meet the response time goals to calls for service, it is necessary to assess three variables. First, the response time values for FBPD must be determined. Response times are based on the amount of time from the call being dispatched to arrival of the officer on the scene. The response time values in Table 7 were provided to the research team by FBPD personnel and are based on 2015 data.

Second, the response time objectives established in the MAPP require that the size of the geographic area covered by patrol be taken into account. The City of Farmers Branch encompasses 12.1 square miles. This value was used in the development of the base MAPP (see Table 7).

Third, average response speed to emergency and non-emergency calls for service must be determined. Since data on average response speeds were not available from FBPD, the average response speeds from previous allocation studies conducted by the research team were used. These response speeds were validated in a study supported by the National Highway Traffic Safety Administration. The response speeds may seem low but they take into account the time in which the officer must stop at stop lights (for non-emergency activities), slow down due to traffic conditions, as well as other circumstances which cause the patrol vehicle to slow down. The response time data used in the development of the base MAPP are presented in Table 7.

Table 7 – Base MAPP Input Values for Response Time Variables

MAPP Variable	2015
Response Time for Priority 1 Calls (<i>minutes</i>)	3.91
Response Time for Priority 2 Calls (<i>minutes</i>)	3.44
Response Time for Priority 3 Calls (<i>minutes</i>)	4.20
Area (<i>square miles</i>)	12.1
Average Response Speed to Emergency Calls for Service	39 mph
Average Response Speed to Non-Emergency Calls for Service	19 mph

Immediate Availability Variables

It is critical for FBPD to have enough patrol officers on-duty to be able to immediately respond to emergency calls for service. In determining the number of officers needed to have an officer immediately available to respond to an emergency call for service, two variables are taken into account. First, the percentage of time an officer is available to immediately respond to an emergency call for service was established. Based on an administrative goal established by the FBPD command staff, the immediate availability standard was set at 99% which was then used in the base MAPP (see Table 8). For the base MAPP, the percentage of time one patrol officer will be available to immediately respond to an emergency call for service was set at 99% and is certainly a reasonable expectation due to the rarity and severity of emergency calls for service.

Second, when determining the number of officers needed to provide an immediate response to an emergency call for service, it is assumed that there are occasions when an officer who is on another call for service or self-initiated or administrative activity can clear that call or activity and respond to the emergency call. When the officer is finished responding to the emergency call for service, then the officer can return to the previous call or activity if necessary. Therefore, a certain percentage of calls for service, self-initiated activities, and administrative activities can be preempted if an officer is needed to respond to an emergency call for service. However, it is argued that some calls for service or self-initiated activities cannot or should not be preempted because of the severity of the call for service, potential escalation, or because of citizen satisfaction reasons. The FBPD command staff set the preemption values illustrated in Table 8. For example, the preemption value for calls for service is set at 20% which means that 20% of the calls for service cannot be preempted if an emergency call is received and a patrol officer is not available to take the call while the other remaining 80% of calls for service can be preempted if necessary.

Table 8 – Base MAPP Input Values for Immediate Availability Variables

MAPP Variable	2015
Percentage of time an officer will be available to immediately respond to an emergency call for service	99%
Percentage of calls for service that cannot be preempted	20%
Percentage of administrative activities that cannot be preempted	15%
Percentage of self-initiated activities that cannot be preempted	25%

Visibility Variables

In order to determine the number of officers needed to meet the visibility performance objective, it is necessary to assess three variables. First, the visibility objective for two types of roadways must be set: 1) highway and arterial roadways, and 2) collector and residential streets. These objectives are based on the answer to the following questions: 1) how often should a patrol officer pass any given point on a highway or arterial roadway? and 2) how often should a patrol officer

pass any given point on a collector or residential street? Basically, if a person was to stand on a street, how often should they see a patrol officer? The visibility objectives were set at 3 hours for highway and arterial roadways and 12 hours for collector and residential streets by the FBPD command staff. This basically means that an officer should pass any given point on a highway or arterial roadway once every 3 hours and any given point on a collector or residential street every 12 hours. It is also important to remember that this performance objective is basically an average. Therefore, there will be some residential roadways in which an officer is seen more frequently than once every 12 hours. Likewise, there will be some residential roadways in which an officer is seen less frequently than the visibility objective.

Second, the visibility objectives established in the MAPP require that the number of roadway miles be taken into account. The number of highway/arterial and collector/residential roadway miles was provided to the research team by FBPD personnel. The City of Farmers Branch has 43.5 miles of highway/arterial roadways and 91.6 miles of collector/residential streets. Third, average patrol speed must be determined. Since average patrol speeds were not available from FBPD, the average patrol speeds from previous allocation studies conducted by the research team were used. These patrol speeds were validated in a study supported by the National Highway Traffic Safety Administration. The patrol speeds may seem low but they take into account the time in which the officer must stop at stop signs, slow down to verify or dispel suspicious circumstances, and identify precursors to criminal activity. The visibility objective data used in the development of the MAPP are presented in Table 9.

Table 9 – Base MAPP Input Values for Visibility Variables

MAPP Variable	2015
Visibility Objective – Highway/Arterial Roadways (<i>hours</i>)	3
Visibility Objective – Collector/Residential Streets (<i>hours</i>)	12
Miles of Highway and Arterial Roadways	43.5
Miles of Collector and Residential Streets	91.6
Average Patrol Speed – Highway/Arterial Roadways	24 mph
Average Patrol Speed – Collector/Residential Streets	14 mph

Weights for Performance Objectives

As discussed, the MAPP focuses on several performance objectives. By weighting the performance objectives, FBPD command staff can decide which of the performance objectives is most important and thus should hold more weight in determining the number of officers that need to be assigned to patrol. The weights must add up to 100%. For example, if FBPD command staff feels that each performance objective is equally important, then a 20% weight is assigned to each performance objective. The FBPD command staff assigned a 40% weight to the immediate availability objective while a 15% weight was assigned to the remaining performance objectives [i.e., 1) response time to Priority 1 calls objective, 2) response time to Priority 2 calls objective, 3)

response time to Priority 3 calls objective, and 4) patrol visibility objective]. The immediate availability objective is most important and thus will hold more weight in the determination of the number of officers that should be assigned to patrol. The weights for each performance objective are illustrated in Table 10.

Table 10 – Base MAPP Input Values for Performance Objective Weights

MAPP Variable	2015
Immediate Availability Objective Weight	40%
Patrol Visibility Objective Weight	15%
Response Time Goal for Priority 1 Calls Objective Weight	15%
Response Time Goal for Priority 2 Calls Objective Weight	15%
Response Time Goal for Priority 3 Calls Objective Weight	15%

Leave Percentage

According to data provided by FBPD personnel, the leave percentage which accounts for vacation, sick leave, holiday leave, and training, among others forms of leave was 18.3% for patrol officers in 2015. The FBPD leave percentage is consistent with the average range of 18%-24% established in prior staffing studies conducted by the research team.

Two Officer Units

The percentage of time patrol units are staffed with two officers was also taken into account in the development of the base MAPP. The use of two officer units is rare in FBPD; the value was set at 1% in the base MAPP.

RESULTS OF THE BASE MAPP MODELING PROCESS

Table 11 illustrates the value for each variable used in the development of the base MAPP which depicts the 2015 state of conditions in FBPD patrol. Using the data presented in Table 11, the base MAPP was able to accurately determine that 41 officers were assigned to FBPD patrol in 2015. The patrol staffing levels determined by the base MAPP are equivalent to the 2015 patrol staffing levels within FBPD. Therefore, the base MAPP is an accurate reflection of the 2015 conditions in FBPD patrol and the concurrent validity (i.e., accuracy) of the MAPP has been established. Validation is always completed to a known factor. In this case, the known factor is the number of FBPD patrol officers in 2015 (n=41).

Table 11 – MAPP Variables and Determination of Staffing Needs

Call for Service and Service Time Variables	Base MAPP: 2015 Data	Variables Changed for 5 Year Strategic Staffing Plan
Annual number of Priority 1 CFS (includes primary units)	10,630	15,560
Annual number of Priority 2 CFS (includes primary units)	2,878	4,213
Annual number of Priority 3 CFS (includes primary units)	751	1,099
Average service time (<i>minutes</i>) per Priority 1 CFS (includes primary units)	33.6	
Average service time (<i>minutes</i>) per Priority 2 CFS (includes primary units)	12.7	
Average service time (<i>minutes</i>) per Priority 3 CFS (includes primary units)	13.5	
Annual number of back-up unit responses to Priority 1 CFS	13,441	19,675
Annual number of back-up unit responses to Priority 2 CFS	2,959	4,331
Annual number of back-up unit responses to Priority 3 CFS	430	629
Average service time (<i>minutes</i>) per back-up response to Priority 1 CFS	22.8	
Average service time (<i>minutes</i>) per back-up response to Priority 2 CFS	22.7	
Average service time (<i>minutes</i>) per back-up response to Priority 3 CFS	23.3	
Self-Initiated and Administrative Time Variables		
Performance objective - Self-initiated time in minutes per hour per officer	18.0	20.0
Performance objective - Administrative time in minutes per hour per officer	11.24	12.5
Response Time Variables		
Performance objective – Response time for Priority 1 CFS (<i>minutes</i>)	3.91	
Performance objective – Response time for Priority 2 CFS (<i>minutes</i>)	3.44	
Performance objective – Response time for Priority 3 CFS (<i>minutes</i>)	4.20	
Area (<i>square miles</i>)	12.1	
Average response speed (<i>mph</i>) to emergency CFS	39	
Average response speed (<i>mph</i>) to non-emergency CFS	19	
Immediate Availability Variables		
Performance objective - Percentage of time an officer will be available to immediately respond to an emergency call	99	
Percentage of calls for service that cannot be preempted	20	
Percentage of administrative activities that cannot be preempted	15	
Percentage of self-initiated activities that cannot be preempted	25	
Visibility Variables		
Performance objective - Visibility objective (<i>hours</i>), highway/arterial roadways	3.0	
Performance objective - Visibility objective (<i>hours</i>), collector/residential roadways	12.0	
Number of miles, highway/arterial roadways	43.5	
Number of miles, collector/residential roadways	91.6	
Average patrol speed (<i>mph</i>), highway/arterial roadways	24	
Average patrol speed (<i>mph</i>), collector/residential roadways	14	
Weights for Performance Objectives		
Immediate availability objective weight (percentage)	40	
Response time for Priority 1 CFS objective weight (percentage)	15	
Response time for Priority 2 CFS objective weight (percentage)	15	
Response time for Priority 3 CFS objective weight (percentage)	15	
Patrol visibility objective weight (percentage)	15	
Leave Percentage		
Average percentage of time on leave	18.3	
Additional Variable		
Percentage of time patrol units staffed with two officers	1.0	
Number of Patrol Officers (excludes supervisors)	41	54
Additional Patrol Officers (excludes supervisors) Needed over 5 Years		+13

SECTION II: STRATEGIC STAFFING PLAN – STAFFING THE PATROL FUNCTION

Since concurrent validity was established in the development of the base MAPP, this section of the report focuses on building a strategic staffing plan for FBPD patrol and the predictive validity of the MAPP. Predictive validity addresses the ability of the MAPP to accurately determine the results that will occur in the future when additional patrol officers are added in FBPD. Since the base MAPP demonstrated the concurrent validity of the MAPP as a mathematical replication of the 2015 conditions within FBPD patrol, the MAPP can accurately determine future patrol staffing needs by modifying the variables utilized in the base MAPP. Any of the values in the base MAPP can be modified and the patrol staffing needs to meet the new performance objective accurately determined. Therefore, the predictive validity of the MAPP can be established and the FBPD command staff can have confidence that the increases in patrol staffing will result in the intended benefits.

BUILDING THE STRATEGIC STAFFING PLAN FOR PATROL

As illustrated in Table 11, FBPD patrol staffing increases are necessary to increase the capacity of the FBPD Patrol Division to absorb expected increases in calls for service due to population growth and slightly increase self-initiated and administrative time. The rows highlighted in blue in Table 11 reflect the variables that were changed from the base MAPP to build the strategic staffing plan for patrol and each is discussed below. *All of the other variables in the base MAPP remained the same in the MAPP developed for the strategic patrol staffing plan.*

1) Calls for Service

Calls for service responses for both primary and back-up units are expected to increase over the next five years due to population growth. As previously mentioned, the City of Farmers Branch is expected to experience significant population growth over the next several years. According to a 2016 Farmers Branch City Council Retreat PowerPoint presentation received by the research team, the City of Farmers Branch had a population of 30,124 in 2015. According to an October 2016 presentation given to FBPD supervisors by Andy Gilles, City of Farmers Branch Director of Planning, the City of Farmers Branch is expected to have a residential population in excess of 40,000 in 2020. This equates to an approximately 33% increase in population in five years. As illustrated, the City of Farmers Branch is expected to experience significant population growth over the next 5 years which will impact the law enforcement services provided to the community by FBPD.

In order to project calls for service increases over the next five years, the proportion of calls for service, by priority level, per citizen, for both primary and back-up unit responses was calculated using the 2015 population and the 2015 calls for service data utilized in this study.

The proportion was then used as a constant and applied to the projected population growth rate of 6.56% annually which is based on the 2015 population (i.e., 30,124) and projected population of 40,000 in 2020. This is the most conservative means to calculate increases in calls for service due to population growth since it assumes there are no changes in other factors, besides population numbers, that impact calls for service. The projected calls for service are presented in Table 11 and highlighted in blue.

2) Self-Initiated Activity

Self-initiated time in minutes per hour per officer was slightly increased from the current 18 minutes in the base MAPP calculated on actual 2015 data to 20 minutes (i.e., 33% of each shift) in the MAPP developed for the strategic patrol staffing plan as illustrated in Table 11. It is recommended that FBPD patrol officers spend 33% of each shift on self-initiated activities; 20 minutes per hour per officer. *This standard fits with the norms established by the research team in prior staffing studies of between 25%-35% self-initiated time on each shift, fits with the long-established national standard of 33% of each shift should be allocated for self-initiated activities, and fits with current best practices in law enforcement which will put FBPD more in line with contemporary patrol staffing standards.*

3) Administrative Activity

Administrative time in minutes per hour per officer was slightly increased from the current 11.24 minutes in the base MAPP calculated on actual 2015 data to 12.5 minutes (i.e., 20.83% of each shift) in the MAPP developed for the strategic patrol staffing plan as illustrated in Table 11. *Allowing 12.5 minutes per hour per officer for administrative activities is consistent with contemporary patrol staffing standards and with norms established in prior staffing studies by the research team.*

All of the other variables in the base MAPP remained the same in the MAPP developed for the strategic patrol staffing plan.

Recommendation #1: Based on the results of the MAPP, it is recommended that 54 patrol officers be assigned to the FBPD Patrol Division by the end of fiscal year 2021-22. This is 13 additional patrol officers above the current authorized patrol officer/corporal deployment of 41.

<u>Implementation Timeframe:</u>	FY 2017-18 – Add 3 patrol officers
	FY 2018-19 – Add 2 patrol officers
	FY 2019-20 – Add 3 patrol officers
	FY 2020-21 – Add 2 patrol officers
	FY 2021-22 – Add 3 patrol officers

This represents an increase of 13 patrol officers over the current patrol deployment of 41 officers. Changes of this magnitude do not typically occur quickly. Therefore, the strategic patrol staffing plan will accomplish the addition of 13 patrol officers over a five-year period. The City needs to make steady progress towards the goal of adding 13 patrol officers over the next 5 years. Without additional staffing, the FBPD Patrol Division will not be able to absorb the expected increases in calls for service or slightly increase self-initiated and administrative activities without negatively impacting other patrol performance objectives (e.g., response time to calls for service, patrol visibility, and immediate availability).

The implementation of the strategic patrol staffing plan as designed will allow FBPD patrol officers to do the following:

- Annually respond to a proportionate increase in calls for service due to expected population growth;
- Respond to calls for service in 4 minutes;
- Have one officer available to immediately respond to an emergency call for service 99% of the time;
- Provide a significant level of police visibility in the community;
- Spend 33% of their shift on self-initiated activities;
- Spend 20.83% of their shift on administrative activities; and
- Maintain the current leave rate for patrol officers.

FBPD's Future: Points to Consider

In concluding this section of the report, a few points to consider are offered as FBPD implements this strategic patrol staffing plan. First, since the validity of the MAPP was established, it is expected the benefits described in the previous section will be realized as patrol staffing increases occur (i.e., ability to handle increases in calls for service and slight increases in self-initiated and administrative activity without negatively impacting other patrol performance objectives). It is recommended that FBPD personnel measure the benefits obtained each year as staffing increases occur to further validate the results of the added patrol personnel.

Second, the FBPD command staff should be cognizant of the benchmarks established for patrol in this report and measure their maintenance annually. For example, the patrol staffing levels in this report are established to allow FBPD patrol officers to annually respond to a proportionate increase in calls for service due to expected population growth. If the annual increase in calls for service is larger or smaller than projected, then new benchmarks for annual calls for service, by priority

level, should be established through trend analysis and the patrol staffing increases recommended in this report should be adjusted accordingly.

Third, these points are offered because the patrol modeling process is a dynamic process that needs to be routinely revisited because other variables besides the ones included in the model can impact the variables utilized in the modeling process. For example, as noted, the expected calls for service may actually be higher or lower than projected due to growth in the City of Farmers Branch. The model included in Table 11 and the values utilized to perform the calculations to determine the requisite staffing levels of the FBPD Patrol Division in the future are stagnant at this point. As variables both inside and outside the model change, the model must be refined to reflect current conditions. In the end, this can lead to a need for more than or less than the projected number of patrol officers over the next five years.

SECTION III: PATROL DIVISION STAFFING – ADDITIONAL STAFFING NEEDS

In addition to patrol officers and corporals, all positions in the FBPD Patrol Division were assessed including K-9 officer, Public Service Officer (PSO), Traffic officers and supervision including watch commanders. Based on the assessment, the research team found that the staffing levels of the other positions in the Patrol Division are sufficient for the next five years with one exception.

Recommendation #2: Based on the assessment, it is recommended that 1 additional Public Service Officer (PSO) be hired and assigned to the Patrol Division.

Implementation Timeframe: FY 2018-19 – Add 1 Public Service Officer (PSO)

The utilization of PSOs have grown increasingly popular in law enforcement agencies throughout the country. PSOs are civilian personnel who perform functions that are required of patrol officers when PSOs are not available. The activities can include house watches, fleet and equipment maintenance, as well as other activities that do not require the skill set of a patrol officer. It is an efficient use of patrol resources to have one PSO assigned to the first and second watch of patrol. At this time, a PSO is currently shared by first and second watch. It is recommended that another PSO be hired and one assigned exclusively to first watch patrol with the other assigned exclusively to second watch patrol to alleviate some of the tasks currently performed by patrol officers that can be performed by a PSO.

SECTION IV: SUPPORT SERVICES DIVISION STAFFING

The Support Services Division includes the Criminal Investigations Division, Jail Division, Property Room, Special Investigations Division which includes the Vice/Narcotics Section and Youth Services Section, and Training Division. Staffing within each of these divisions and sections were assessed by the research team. As previously mentioned, if a FBPD division or section is not discussed in this report, then the findings of the research team indicate that the staffing levels of the division or section are sufficient for the next five years

STAFFING AND MODELING THE CRIMINAL INVESTIGATIONS FUNCTION

Detective units can be categorized in many ways. One of the categorization means is to divide criminal investigations into reactive and proactive units. Even though each unit may provide both reactive and proactive services, one of the two characterizations is prominent in each unit. The activities of reactive units are primarily determined by incidents that have been reported by a citizen to a patrol officer that has then been routed to a Support Services Division supervisor for further review and then assigned to a detective for follow-up investigation. Not all cases are assigned for follow-up investigation because they are either unlikely to be solved or because staffing levels limit the number of cases that can be assigned to investigators. The workload of reactive units is quantifiable by assessing the number of cases referred to the investigations supervisor for further review and the case assignment practices within the investigative unit. The Criminal Investigations Division and Youth Services Section are examples of traditional reactive investigative units within FBPD. Proactive units certainly work cases but much of the effort expended in these units is proactive through the development of criminal informants and intelligence to target drugs. The Vice/Narcotics Section can be classified as a proactive investigative unit within FBPD.

The analysis performed to determine the staffing needs of an investigative unit differs depending on whether the unit is reactive or proactive. Proactive units, since the activity is less quantifiable, are not good candidates for the modeling process. On the other hand, reactive units fit well within the parameters of the modeling process.

Customized staffing models were developed for the reactive investigative divisions/sections within FBPD. Several data elements were assessed during the review of these investigative sections. The observations derived and conclusions drawn from the data are discussed in this section.

Before the analysis is discussed, it is important to mention how the expected population increases previously discussed will impact the workload of detectives assigned with the Support Services Division. As previously discussed, the population of the City of Farmers Branch is expected to increase from 30,124 in 2015 to 40,000 in 2020. The workload of the reactive units in the Criminal Investigations Division and Youth Services Section originates primarily from citizen calls for service or agency/officer referrals. A review of the offenses listed in Table 13 (discussed later in

this report) illustrates that many of the offenses investigated within the Support Services Division are offenses FBPD becomes aware of because a citizen calls FBPD for assistance. Therefore, as the population increases, the number of thefts, assaults, auto thefts, burglaries, and other offenses that need to be investigated will also increase; thus, impacting the workload of the detectives assigned to the Support Services Division.

Case Assignment Analysis

For each offense applicable to the investigative division/section, the sergeant reads the initial report completed by the patrol officer and makes a case assignment decision based on the initial report. The sergeant takes into account several factors, as applicable, in deciding to assign a case or not including, witness to the crime, knowledge of suspect's name, traceable property, specific method of operation, presence of usable physical evidence, and severity of the offense, among others.

Data were obtained on the number of cases reviewed by the Criminal Investigations Division and Special Investigations Division sergeants from 2013-2015 (see Table 12). From 2013-2015, a total of 6,425 cases were reviewed by the Criminal Investigations Division supervisor, with 3,317 cases being assigned to detectives for a follow-up investigation. The remaining unassigned cases from 2013-2015 (n=3,108) were suspended or inactivated and no investigative effort was expended on them by division detectives. Overall, 51.6% of the cases reviewed by the sergeant were assigned to Criminal Investigation Division detectives in 2015. The percentage of cases assigned to detectives is significantly higher than the norm identified by the research team in prior staffing assessments of between 15%-20% of the cases reviewed by supervisors assigned to detectives. The high case assignment rate aligns with the values of the City of Farmers Branch to provide a high level of police service to the community.

From 2013-2015, a total of 1,176 cases were reviewed by the Youth Services Section supervisor, with 999 cases being assigned to detectives for a follow-up investigation. The remaining unassigned cases from 2013-2015 (n=177) were suspended or inactivated and no investigative effort was expended on them by division detectives. Overall, 84.9% of the cases reviewed by the sergeant were assigned to Youth Services Section detectives in 2015. As previously mentioned, the percentage of cases assigned to detectives is significantly higher than the norm identified by the research team in prior staffing assessments.

When the supervisors were questioned about the higher percentage of case assignments, they responded that the service orientation of the department impacts case assignment decisions. Since each case represents a crime victim in the City of Farmers Branch, if the case even has a minimum probability of being solved, it will get assigned to a detective. This practice should be lauded as many law enforcement agencies today set higher thresholds on solvability before cases are assigned to detectives.

Table 12 – Case Assignment to Detectives: 2013-2015

Case Assigned to Detective	Criminal Investigations Division	Youth Services Section
Yes	3,317	999
No	3,108	177
Total	6,425	1,176
Percent of Cases Assigned	51.6%	84.9%
Percent of Cases Not Assigned	48.4%	15.1%

The case assignment process determines the workload of investigative units that are reactive. In order to further assess FBPD case assignment practices, the research team assessed the number of new cases assigned by investigator by month from 2013-2015. There are two general measures of detective workload used in staffing assessments. The first is the overall caseload of the investigator. The overall caseload is the total number of cases assigned to an investigator and is the traditional measure of detective workload. The major weakness with this measure is that it is an inadequate reflection of the current activity of an individual detective. Some of the assigned cases may be awaiting forensic analysis while others may be waiting for additional witnesses to surface. These types of cases are not being actively worked by the detectives but they are still counted as part of their overall caseload.

The second measure of detective workload is the number of new cases assigned to each detective each month. The second measure is the preferred measure to use in investigative staffing assessments because it is seen as a more accurate reflection of the current activity of detectives. Research on the criminal investigations process has routinely shown that around 90-95% of all cases cleared by arrest are cleared within the first 30 days. After 30 days, it is either unlikely that the case is going to be solved or the detective is waiting on evidence to be processed or lab results to be returned. Detectives are not spending much time on these types of cases, unless it is a major case, but they are still counted in their overall workload. A revolving 30-day measure of the number of new cases assigned to each detective is seen as a better measure of detective workload and is therefore used in this assessment. FBPD provided the research team with data on the total number of cases assigned to each detective by month from 2013-2015.

To maintain the readability of this report, the data for each individual investigator will not be presented, but the observations gleaned from the data by the research team will be discussed and considered in making staffing recommendations.

From 2013-2015, there was some month to month variation in the number of cases assigned to each investigator. Since seasonal variations in crime are well documented, the variability across months is expected. National standards on the number of new cases that should be assigned to an

investigator in a month do not exist. The standard set by the research team based on prior research, including time and motion studies in investigative units completed by the team, is a maximum of 12 cases per month for violent crimes and 20 cases per month for property crimes. Certainly there are exceptions to this standard based on the severity of the offense being investigated (e.g., an investigator cannot investigate 12 murders each month) and complexity of the investigation (e.g., an investigator cannot investigate 20 multinational identity theft offenses each month). These types of offenses are rare in Farmers Branch so the “12 cases per month for violent crimes and 20 cases per month for property crimes” standard is a reasonable maximum standard to set. This standard is most applicable to the operations of the Criminal Investigations Division and Youth Services Bureau. Although there were some months where detectives were assigned more cases than the standard established in this report, in most months, the number of new cases assigned per month to an investigator remained below the standard.

As previously mentioned, the capacity of detectives regarding the number of cases assigned per month is partially dependent on the types of offenses being investigated. In order to assess the types of cases investigated, the research team reviewed the number and type of cases assigned with FBPD from 2013-2015. Table 13 illustrates the five most common offenses assigned to detectives in 2015 specifically.

Table 13 – Most Common Cases Investigated by FBPD – 2015

Offense Type	Number
Drug-Related Offenses	300
Theft	196
Driving While Intoxicated	186
Assaultive Offenses	158
Child Protective Services Referral	128

Conclusions and Recommendations: Staffing the Criminal Investigations Division

Based on the above analysis, two detectives should be added to the Criminal Investigations Division over the next five years. Specifically, it is expected that one detective will be needed to investigate property crime cases primarily while the second detective will be needed to investigate financial crime cases primarily. The recommendation and implementation timeframe are presented below. The current detective staffing levels are presented in Table 14 as well.

Table 14 – Detective Staffing

Position	Classification	Authorized Personnel
Criminal Investigations Division Detectives	Sworn	6
Vice/Narcotics Section Detectives	Sworn	2
Youth Services Section Detectives	Sworn	2
		Total: 10

Recommendation #3: Add 2 detectives to the Criminal Investigations Division by the end of fiscal year 2021-22.

Implementation Timeframe: FY 2019-20 – Add 1 detective
FY 2020-21 – Add 1 detective

STAFFING THE TRAINING DIVISION

FBPD has one sergeant assigned to its Training Division with no additional personnel assigned. In agencies of similar size to FBPD, it is common to bifurcate the Training Division and have a training specialist and a personnel specialist. At this time, with only one person assigned to the Training Division, all personnel and training tasks are assigned to one sergeant. The sergeant handles personnel related tasks from recruiting, testing, hiring, and other steps up to the candidate starting the PTO program. In addition, the sergeant is responsible for in-service training within FBPD and maintaining training records for FBPD and audits by the Texas Commission on Law Enforcement. In addition, ancillary duties are assigned to the Training Division such as grant administration, red light camera enforcement, budget preparation, as well as other tasks. The addition of a personnel officer assigned to the Training Division will allow for the bifurcation of tasks as well as collaboration depending on the needs of the Division. In addition, as this strategic staffing plan is implemented, a personnel officer to focus on recruiting and hiring the additional staff recommended in this plan is necessary and beyond the capacity of the current sergeant. Therefore, the following recommendation is offered.

Recommendation #4: Add 1 officer to the Training Division by the end of fiscal year 2021-22.

Implementation Timeframe: FY 2017-18 – Add 1 officer

SECTION V: ADDITIONAL STAFFING NEEDS

Currently, the lieutenant over the Special Investigations Division which includes the Vice/Narcotics Section and the Youth Services Section is also over Internal Affairs and the Records Section. The FBPD needs a full-time records manager who can also supervise the three records technicians assigned to the Records Section. Hiring a civilian records manager who has expertise in records management within a police agency is necessary since records management is fraught with potential liability whether from open records requests, Criminal Justice Information Services (CJIS) standards (i.e., federal rules regarding the security and release of law enforcement data), and Texas Crime Information Center (TCIC) validations which hosts data on wanted, missing, sex offender, or protective order status of persons, to name a few. In an agency the size of FBPD, having a lieutenant, who is not a subject matter expert on records management in law enforcement, is not recommended. Due to the above, the below recommendation is offered.

Recommendation #5: Add 1 Records Manager by the end of fiscal year 2021-22.

Implementation Timeframe: FY 2018-19 – Add 1 Records Manager

SECTION VI: SUMMARY OF STAFFING RECOMMENDATIONS

The staffing recommendations for the next five years made within this report are included in Table 15.

Table 15 – Summary of Staffing Recommendations by Fiscal Year

Positions – FY 2017-18	Classification	Number of Positions
Patrol Division		
Patrol Officer	Sworn	3
Support Services Division		
Training Division Officer	Sworn	1
Total New Positions		4
Positions – FY 2018-19	Classification	Number of Positions
Office of the Chief		
Records Manager	Civilian	1
Patrol Division		
Patrol Officer	Sworn	2
Public Service Officer	Civilian	1
Total New Positions		4
Positions – FY 2019-20	Classification	Number of Positions
Patrol Division		
Patrol Officer	Sworn	3
Support Services Division		
Criminal Investigations Division Detective	Sworn	1
Total New Positions		4
Positions – FY 2020-21	Classification	Number of Positions
Patrol Division		
Patrol Officer	Sworn	2
Support Services Division		
Criminal Investigations Division Detective	Sworn	1
Total New Positions		3
Positions – FY 2021-22	Classification	Number of Positions
Patrol Division		
Patrol Officer	Sworn	2
Total New Positions		2