Using hypothesis testing in crime analysis helps to better understand (and evidence) why a crime problem exists. The process also identifies the data that are required. The production of analysis using the hypothesis testing approach involves four stages:

STAGE 1 – THE OVERVIEW: this involves clearly defining the crime problem. It should determine the magnitude and scale of the problem, trends, and any specific information that helps more clearly identify what the problem involves. The overview should be concise (i.e. a maximum of three pages in length), but should provide enough detail for stage 2.

STAGE 2 – DECIDING ON HYPOTHESES: in this second stage, the key stakeholders of the problem should review the overview, provide additional information to support it, and determine reasons for why they think the problem exists. The key stakeholders are people who have an interest in the problem, and/or are in positions of responsibility to potentially do something about it. Ideally, these key stakeholders should come from a number of different local agencies. This helps to ensure a better balance on the reasons why the problem exists and helps gain partner agency buy-in for any responses that are decided later on in the process. It is the role of the analyst to collate the hypotheses and determine with the key stakeholders the hypotheses that should be tested. To produce a shortlist, each hypothesis should be qualified in terms of whether it can be attributed to the problem that is being defined over the timeframe that the problem has emerged/exists. The testing of each hypothesis should also result in information that can inform a response. The hypotheses that are determined therefore need to be clear and specific. Practice suggests that three to five hypotheses is the preferred number to test, simply because there is unlikely to be analytical capacity to test any more in the timeframe required.

STAGE 3 – ANALYSIS: the hypotheses frame the direction and content of the analysis. The primary objective is to come to some conclusions that provide evidence that does or does not support each hypothesis. The type of analysis to conduct is determined by the hypothesis that is tested. For example, if a hypothesis states that a recent increase in residential burglaries is related to an increase in homes being left insecure (due to residents leaving windows open because of a recent prolonged period of hot weather), the analysis will need to identify if there has been a recent increase in overnight temperature that coincided with the increase in burglaries, and if the volume and proportion of insecure burglaries has increased in line with the burglary increase. This process will also identify where there are intelligence gaps and any data may need to be collected in order to test a hypothesis e.g. weather data or a survey of residents.

STAGE 4 – CONCLUSIONS AND RESPONSE RECOMMENDATIONS: the hypothesis testing approach naturally leads to building evidence that can help explain why the problem exists, and in turn makes it easier to interpret these findings into conclusions. Key stakeholders (rather than just analysts) should be involved in interpreting the analysis. This is best conducted by holding a meeting to discuss the findings. It is at this stage that the key stakeholders should use the analysis to help decide how the problem can be addressed. Experience suggests that the better the problem is understood, the easier it is to determine specific tactics and strategies that will counter the issues the analysis has identified.