Recently, Planned Missingness designs have grown in popularity. The deliberate collection of partial data has been proven to reduce study costs and alleviate participant burden. There are multiple forms of Planned Missingness. Research has shown that one such method, Split Form, effectively simplifies complex surveys while another, Wave Missingness, performs similarly for longitudinal studies. However, for studies that incorporate elements of both survey and longitudinal designs, the implementation of planned missingness has received little attention. This oversight is particularly relevant in studies where participants are issued a survey on multiple occasions. Here, the ideal missingness design is still unclear. To address this inadequacy, data was simulated under both Split Form and Wave Missingness structures. Then, in each simulation set, multiple imputation techniques were used to estimate a logistic model. The resulting parameter estimates were then compared to the true values obtained from the original data, to assess which method best captured the true model. The results of this study indicate that the Wave Missingness design was consistently less effective in modeling the data than Split Form, which performs well under a variety of conditions. In the context of longitudinal surveys, this study recommends the use of Split Form missingness designs.