ABSTRACT Although much research focuses on the positive impact that Smarter Lunchroom strategies have on elementary and middle school students, limited research has been conducted to test the effects of Smarter Lunchroom design among high school students, despite documented research about the importance of healthy food choices for adolescents. This study will utilize a participatory approach to answer the research question: To what degree does stakeholder involvement in Smarter Lunchroom design targeted towards fruits and vegetables change school lunch participation rates and fruit and vegetable plate waste? The intervention will consist of a pre/post three-phase approach. Phase I will investigate all possible opportunities for Smarter Lunchroom redesign in two high percentage free and reduced meal high schools, measure baseline plate waste for five consecutive days, and collect school meals participation data. During Phase II, high school stakeholders will participate in three Smarter Lunchroom workshops to strategize and market low-cost and effective approaches for school cafeterias to increase healthy food consumption and reduce plate waste. During Phase III, three Smarter Lunchroom changes will be implemented in each school cafeteria, post intervention plate waste data will be collected for five consecutive days, and school meals participation rates will be collected. To analyze, researchers will utilize descriptive statistics, ANOVA, and qualitative analysis to describe and detect differences between plate waste based on lunchroom redesign and school meal participation rates. Results will be disseminated to relevant stakeholders through various state and national avenues to ensure that the results will be translated into action at local high school levels.