**INTRODUCTION**

The University of Washington Housing and Food Services (UW HFS) and Bay Laurel Catering (BLC) are responsible for two main catering bases:

1. Grab-N-Go Catering Around Campus
   - Cater to 15 campus-wide locations
   - Provide menu-driven, off-campus service
   - Serve food in a variety of formats
   - Operate under a partnership with BLC

2. Catering to different locations
   - Cater to events in various locations
   - Provide on-demand catering
   - Operate under a partnership with BLC

**OBJECTIVE**

The University of Washington Housing and Food Services (UW HFS) and Bay Laurel Catering (BLC) are responsible for two main catering bases:

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**METHODOLOGY**

1. Data Collection
   - Interviews with BLC staff and leadership to understand current daily routes, timing, and labor cost data.
   - Obtain travel times from Google Maps.

2. Base Model Design
   - Build current state model using Simio Model Verification and validation interview with BLC staff leadership.
   - Simulate an accurate and realistic model of the current state.

3. Test Suggested Improvements using Simio
   - Test the suggested improvements using Simio to determine if changes are feasible.

4. Cost-Benefit Analysis
   - Gather and evaluate profit, cost, and volume data from simulation.
   - Use historical data to determine cost variability.

**FINDINGS**

1. Improved Simio Models:
   - Each improvement is modeled by making adjustments to the existing current state Simio model.
   - Cost-benefit analysis is conducted to understand the feasibility and efficacy of these improvements.

2. Current State Simio Model Design & Assumptions:
   - Includes a dynamic event schedule that includes setup, service, and cleanup.
   - Simulation does not account for varying event sizes.
   - Varying event sizes are considered for future work.

3. Base Model Results & Validation:
   - The base model results are validated against historical real-world data.

**IMPROVEMENT OPPORTUNITIES**

1. Adding Refrigeration
   - Potential for increasing refrigeration costs 4 years faster with no improvement.
   - Additional annual maintenance and insurance costs.

2. Removing a Student Worker
   - Provides additional labor for on-demand events.
   - Reduce labor cost.

3. Adding a Vehicle
   - Potential for larger geographic range of events.
   - Potential for larger geographic range of events.

4. Retaining the Current Fleet Size for Now
   - No change in fleet size.
   - No change in fleet size.

**RECOMMENDATIONS**

1. Adding Refrigeration to the Delivery Vehicle
   - Decreases flexibility.

2. Removing the Accompanying Student Worker
   - Potential for increasing refrigeration costs 4 years faster with no improvement.
   - Additional annual maintenance and insurance costs.

3. Retaining the Current Fleet Size for Now
   - No change in fleet size.
   - No change in fleet size.

**FUTURE CONSIDERATIONS**

1. Explore future changes in daily Grab-N-Go routes.

2. Determine improvements in daily physical process, such as loading, unloading, setup, and cleanup during catering events.

3. Explore catering tasks and potential scheduling improvements.

**ACKNOWLEDGEMENT**

1. Prof. Patty Buchanan - For the patience and verification our questions and guiding us through the process.

2. Team BLC - For providing us with the data for our project.

3. UW Bay Laurel Catering - For providing us with a space for our project and expenses