

Illinois State Library Phase Two Project

Report

- A comparative analysis of four different routing scenarios was conducted to determine the impact of routing from a state perspective.
 - Analyzing routing without the current RAILS/IHLS border.
- Four routing scenarios were completed.
 - Current Hubs with Optimized Routing Zones
 - Optimum Seven Hubs
 - Bolingbrook, Rock Falls, East Peoria, Champaign, Springfield, Mt. Vernon, Edwardsville
 - Optimum Six Hubs
 - Bolingbrook, Coal Valley, Springfield, Champaign, Mt. Vernon, Edwardsville
 - Optimum Five Hubs
 - Bolingbrook, Coal Valley, Springfield, Mt. Vernon, Champaign
- Route Variables:
 - Max Route Time – 9 hours
 - Break Time – 1 hour
 - Library Service Time – 10 minutes
 - RAILS Vehicle Capacity – 52.5 bins
 - IHLS Vehicle Capacity – 54 bins
 - Delivery philosophy of each system was honored.
 - RAILS – Daily route schedules
 - IHLS – Function 5-Day Delivery
- Calculating Route Costs:
 - Utilized two variables:
 - Average Delivery Driver Pay for RAILS and IHLS
 - Vehicle Cost estimated using Edmunds True Cost To Own Analysis
 - 2017 Ford Transit Van
- Results:
 - Overall Cost
 - The Optimum Seven Hub Scenario performed the best at \$2,049,089.64 annually.
 - However, it only outperforms the Current Hub scenario by \$40,495.33 annually.
 - Utilizing the Optimum Seven Hub scenario would mean moving from Coal Valley and Rockford to Rock Falls, Carbondale to Mt. Vernon, and adding Springfield.
 - The Current Hub Scenario would only require optimizing routing boundaries for each hub.
 - The Optimum Five and Six Hub Scenarios were more expensive, but these scenarios would result in more libraries receiving more delivery due to Functional 5-Day Delivery.