here are a great many challenging opportunities in preparing for the Democratic National Convention (DNC), to be held Aug. 25-28 in Denver. This article, based on research by the University of Colorado Denver (UCD) students in a Mathematics Clinic, is an introduction to quantitative methods. See www-math.cud-enver.edu/~hgreenbe/clinicS08/ for more information about this project course.

See [3] for a general introduction to event planning, [5] for project management and [6] for a succinct introduction to O.R. initiatives in the hospitality industry. Results will be reported in May on both the content and the process of our work.

First, a caveat: This article is based on the best available information from people still working through what needs to be done (see acknowledgments). Circumstances can change during the next few months.

**Transportation**

The DNC Committee (DNCC) is responsible for transporting delegates and media personnel between hotels and the Pepsi Center where the convention will be held. The DNCC Host Committee (DNCH) is responsible for managing the transportation logistics of the convention.

The primary goal of any transportation system is to maximize service by minimizing delays and travel time. Specific forms of transportation (bus vs. bike vs. pedicabs) will be addressed separately.

The DNCC wants to know:
- how to schedule buses and assign routes with two objectives: maximize service and minimize carbon emissions; and
- how to manage the motor pool (cars with volunteer drivers).

The DNCH wants to know:
- how to schedule buses for selected special events;
- how to schedule buses between DIA and hotels; and
- how many bikes to have on hand, and where.

The design of bus routes and schedules to transport people between their hotels and the Pepsi Center is called a vehicle routing problem (VRP). This is a hard problem, but it has been studied for decades, so there are useful results in the literature. Our situation is non-standard, partly due to the Green initiative.

**GOING 'GREEN' ADDS COMPLEXITY TO CONVENTION'S NOT-SO-CONVENTIONAL LOGISTICS PROBLEMS.**

**IS O.R. UP TO THE CHALLENGE?**

By Harvey J. Greenberg

Prepping for the Democratic National Convention
Volunteer Assignments

Prior Work


We could consider combining bike depots with recycling stations. The Mathematics Clinic can conduct a pre-assignment model that assigns volunteers to tasks based on what is known about volunteer availability and task requirements. A first version can assume perfect information and seek to fulfill each task while maximizing volunteer preferences. A goal of the pre-assignment model is to provide at least one “reasonable” initial assignment and number of volunteers in each skill category. Most of the volunteers will be assigned to tasks before the event. Each volunteer signs up for a block of shifts, which are generally four hours each, and the start-end times could overlap.

The Mathematics Clinic can consider the design of the sampling process and write a guide for the volunteers to implement it. If time permits, this would be accompanied by a guide to perform the analysis that gives the final estimate.

Volunteer Assignments

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