

Bond Case Briefs

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How One City Saved \$5 Million by Routing School Buses with an Algorithm.

The Boston Public School District held a contest to determine the best solution for busing around 25,000 students to school every day. The winning algorithm improved the efficiency of the routes in The yellow school bus has remained largely unchanged since it first debuted in 1939. But while the buses look the same, their routes have grown infinitely more complex in the past 80 years, as the number of students, schools, and road systems grow and change.

Drawing bus routes for Boston Public Schools involves challenges unique to the city. BPS allows parents to select their child's school from a list of about ten options, in an effort to reduce inequalities that might result from isolating students to their neighborhoods. While this represents a greater level of choice than most cities, the resulting bus routes can be meandering and complicated.

Compounding that challenge is the fact that BPS provides more bus services than most other districts. All elementary school students who attend schools more than a mile from their home are offered yellow bus service to one of over 220 schools, and many live much farther than that. Some schools draw students from more than 20 different zip codes. Each of those schools also had different start times, between 7:15 and 9:30 a.m., so buses might have to visit multiple schools for pick up and drop off.

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Route Fifty

By Emma Coleman

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