Background

Bangerter Highway is a major north-south corridor stretching from Salt Lake International Airport in the north to an interchange with I-15 in the south. Prior to construction of a series of Displaced Left Turn Intersections (DLT), also known as Continuous Flow Intersections (CFI), Bangerter Highway experienced high crash rates and heavy delays.

Challenges

Utah DOT’s (UDOT) primary challenge along the corridor was congestion. At some intersections, 25 percent of the signal time was devoted to left turns onto the minor roads, impeding both through and minor road traffic. This challenge was compounded by a high crash rate. Between 1994 and 2003, the intersection of Bangerter and 3500 South alone experienced 618 crashes, an average of more than one crash per week.

Approach

UDOT examined several ways to treat the intersection of Bangerter and 3500 South—both to reduce congestion and to improve safety. A VISSIM simulation comparing a DLT to no changes at this location showed significant operational improvements with the DLT. UDOT installed the DLT at Bangerter and 3500 South and observed how it improved both traffic flow and safety at the intersection. In addition to the decreased commute time of nearly 4 minutes and a 60 percent reduction in crashes near the intersection, UDOT found that the DLT could be constructed for about 1/4 the cost of a grade-separated interchange. This motivated UDOT to install an additional six DLTs along the corridor.

Results

Choosing to apply DLTs saved the state hundreds of millions of dollars. Each new DLT intersection cost between $6 and $8 million. Freeway-like, grade-separated interchanges would have cost $30 to $50 million each and required the re-location of numerous local businesses.

In addition to cost savings, capacity along the corridor has increased by as much as 20-50 percent, depending on the intersection.

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CORRIDOR LOCATION

40°41'47.8"N 111°58'51.4"W

3 Interview with Eric Rasband, Salt Lake City, UT, October 10, 2013.
4 Davidson, “Unusual Utah Intersections.”
5 Interview with Eric Rasband, Salt Lake City, UT, October 10, 2013.
6 Davidson, “Unusual Utah Intersections.”