

## Documenting the Impact of Infrastructure Investments on Traffic Congestion

While it is unrealistic to assume that reconstruction of bottlenecks can eliminate traffic congestion, there is clear evidence that infrastructure investment can improve traffic flows by improving roadway capacity and/or improving free flow of vehicles.

One such example is the Jane Byrne Interchange in Chicago, formerly known as the Chicago Circle interchange, which serves three major interstates (I-90; I-94; I-290) as well as Ida Wells Drive. In 2010, the Jane Byrne Interchange (JBI) was ranked number one in ATRI's annual bottleneck report for three consecutive years. Recognizing that the JBI was nearing the end of its 50-year life, former Illinois Governor Pat Quinn referenced the JBI's position in ATRI's Top Bottleneck report in a press release and committed an initial \$450 million to reconstructing the JBI over several years.



*A view of the Circle Interchange from the Willis Tower in 2018. Photo by Chris6d.*

Prior to construction, daytime vehicle speeds ranged from 12 MPH to 37 MPH, depending on the particular segment of roadway. During that same time, ATRI's truck bottleneck data shows that the average speed of trucks during daytime hours was approximately 22 MPH.

The JBI reconstruction began in 2013 and was staged over multiple years using 35 separate contracts. The entire reconstruction ultimately cost approximately \$800 million, with much of the budget complications arising from poor soil conditions and the reworking of major water and drainage infrastructure.

The JBI reconstruction project added one additional north-south lane in each direction. Capacity was also increased for several ramps. The Chicago Metropolitan Agency for Planning

(CMAP) noted that many of the traffic and safety benefits of the project came from reducing the number of traffic weaves and merges and relocating many of the old traffic maneuvers to new “collector-distributor” roads.

After JBI project completion, vehicle speeds during daytime hours improved as much as 69 percent, with most daytime speeds now ranging from 21 MPH to 40 MPH. CMAP further noted that the largest benefit to road-users – particularly trucks -- is the huge improvement in travel time reliability, whereby speed variability (i.e. unpredictability) improved by more than 90 percent on many JBI road segments.

ATRI’s own truck GPS data confirmed the benefits of the infrastructure investment to the trucking industry: average rush-hour truck speeds increased nearly 25 percent, rising from an average speed of 22 mph before construction to 27 mph at project completion.

Sources:

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