

Improving Bus Transit Safety & Efficiency:

Case Study for New York City's Left Turn Priority System (34th Street and 7th Avenue)



With high traffic volumes on streets citywide, mobility of buses can be restricted, which raises significant safety concerns, increases overall traffic congestion and reduces the efficiency of bus routes. Left turns in particular can be extremely difficult, as buses are often impeded for extended periods, creating frustration for all involved.

Even with signal lights, the amount of time necessary to negotiate a safe left turn remains an issue. An example of this situation is at the intersection of 34th Street and 7th Avenue in Manhattan. At that location, transit buses need to make a left turn from 34th Street westbound to 7th Avenue southbound in the face of heavy oncoming traffic. The signal timing at this intersection is basic two-phase operation, and it is unreasonable to provide a protected left turn for each cycle, as all traffic (except buses) is prohibited from making a left turn, a sign is posted prohibiting left turns from 7 a.m. to 7 p.m.

To mitigate these problems, the New York City Department of Transportation (NYCDOT) sought a solution to improve the safety of bus operations at this intersection from TransCore/JHK Engineering PC¹, which leads the JHK/Urbitran Joint Venture in an Engineering Services Agreement with NYCDOT.

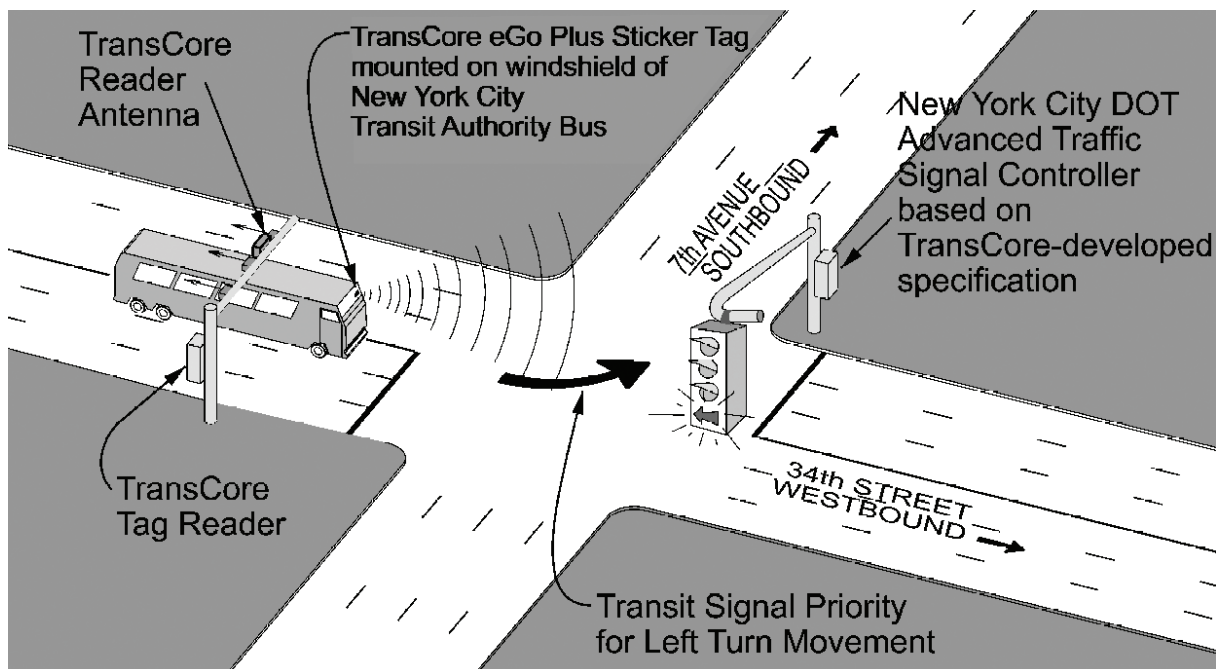
¹ JHK Engineering PC was established by TransCore, to comply with New York State law governing professional services corporations under New York engineering license laws, and has full access to the extensive resources of TransCore.

TransCore/JHK recommended a solution that would utilize Radio Frequency Identification (RFID) technology in concert with the city's new ASTC traffic controllers and wireless network (NYCWIn). For an initial pilot study, TransCore/JHK provided its multi-protocol reader and antennas along with their eGo Plus Sticker Tags. The sticker tags are installed on the New York City Transit Authority (NYCTA) buses and are used to activate a protected left turn at the intersection. Currently fifteen buses are fitted with eGo Plus sticker tags, and additional buses can be added to this route with minimal expense.

With more than 30,000 passengers everyday, the 34th Street line is an ideal venue to test and gauge the viability of the system. In addition, the area is a focal point of the city for a series of bus-mobility improvements, including the increase of cross-town bus speeds and reliability. At nearly two miles in length, approximately 30 bus lines utilize 34th street. By placing the antenna above the center of the roadway, the system is also able to read the RFID tags to calculate real-time travel times for cross-town 34th Street traffic as part of the pilot study. This provides valuable information for drivers and traffic agencies.

With its innovative Left Turn Priority System, TransCore/JHK, has helped NYCDOT deploy an ambitious solution that has not only improved safety, but created efficiencies to reduce traffic congestion and advance the reliability of public transportation.

Transit Signal Priority at 34th Street and 7th Ave in Manhattan



For more information:

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