

## BUS ARRIVALS

LOCATION	DUE	BUS ARRIVING	SERVI
MARBLE ARCH	5 MIN	ON TIME	CONNEX
CLAPHAM	10 MIN	ON TIME	CONNEX
PADDINGTON	15 MIN	ON T	CONNEX
TOOTING	20 MIN	ON T	CONNEX
WANDSWORTH	25 MIN	O	CONNEX
BRIXTON	30 MIN		CONNEX
CAMBERWELL	35 MIN		ONNEX

# CASE STUDY

## ARLINGTON TRANSIT

### Snapshot

**Type of Service: Commuter**

**Ridership: 926,000**

**Peak Vehicles: 20 buses**

**Connexionz Products:**

- 50 street-side BusFinder™ signs
- 1 four-line VMS LED sign
- Dispatcher and route planner interface
- Automatic vehicle location system

### The challenge

Located near Washington DC, Arlington is a small county with a population of 200,226. Although small in terms of land area, it's one of the most densely populated counties in the USA with approximately 7,761 persons per square mile. Traffic congestion is a major problem in Arlington, and increasing bus patronage was seen as the only solution to reduce car usage. To fulfill this mission Arlington Transit had to improve the level of service delivered to its bus passengers.

Arlington operates its own local bus service called ART, a 30 bus fleet that operates within the county's boundaries. At peak traffic times, Arlington Transit runs 20 ART buses on twelve routes, servicing 300 stops in the local area.

Arlington Transit was struggling to manage their bus schedules. The majority of the ART fleet is fueled by CNG with various short and long running times. Fuel stops cannot be scheduled for a set time each day, and to complicate matters further, the operational and fueling area is quite a distance from the depot – at least a forty-five minute drive away (sometimes over an hour at peak traffic times).

### Selection criteria

Arlington Transit identified that Real Time Passenger Information (RTPI) was important to passenger service and operational improvements and had previously trialed another vendor's system. While this system failed to perform reliably, it did demonstrate some of the potential benefits of RTPI, so Arlington Transit decided to do another trial.

Upon evaluating their options again, Arlington Transit chose Connexionz, because they were confident the company would deliver better outcomes. Kelley MacKinnon, Acting Local Transit Operations Coordinator

“Connexionz’ products work well, and their support for our operation has been superior. I recommend them highly”

*Eric Smith, Transit Operations Coordinator.*



## The Connexionz solution

In designing the system for Arlington Transit, Connexionz had to enhance its BusPack – an on-bus hardware unit that communicates between the bus and the central computer. Connexionz' BusPack uses its own internal battery which is automatically recharged by the bus's electric system. The industry standard for a bus power supply is 24 volts, however the majority of ART's fleet is powered by 12 volt batteries; not powerful enough to recharge the BusPack battery.

Connexionz' response to this challenge impressed Arlington Transit: "Connexionz' has been on top of everything from the beginning. If there is one fleet that would test their ability, ART is it," said Ms MacKinnon. "Many problems have been caused by the underrated voltage on our bus system. Connexionz took this under advisement and actually designed new components to incorporate our limited voltage. They have been more than happy to accommodate all our changes and tweaks as they came about."

A GPS receiver connected to the BusPack uses satellites to determine the exact longitude and latitude position of the bus. This information is sent every 20 seconds via private mobile radio to a central computer. Connexionz' system compares this real-time data to preloaded route and assignment data and determines arrival and departure times for each bus stop.

These times are then broadcast to passengers on BusFinder™ signs at 50 stops along ART Bus routes. Connexionz' Busfinder™ signs are designed specifically for the residential bus stops. Their discreet size makes them unobtrusive, and because BusFinder™ signs are battery powered they don't need external power connections, which dramatically reduces installation time and costs.

Connexionz' dispatch application is another integral component of Arlington's RTPI system. Arlington's fleet managers use the application for day-to-day tasks such as assigning buses to trips and blocks. The 20 second position updates provide Arlington's dispatch staff with real-time operational views of the entire fleet, either in tabular form or on a map. The application also alerts dispatchers to common issues including vehicles that are unassigned, off-route or have started early.

The central computer also consolidates the real-time data for management reporting and analysis. Arlington County uses this data to oversee its contract with ART's operations contractor.

## Benefits and results

Arlington has achieved a number of important objectives since deploying Connexionz' RTPI solution:

- Passengers at any of the County's 37 bus shelters are told exactly how long it will be before a bus arrives.
- The dispatcher has the facility to oversee the whole fleet, and now knows which vehicle is on each route, and where they are on that route.
- A reduction in customer complaints.
- Simplified schedule and route planning.
- Archived real-time data has allowed for analysis of operations, resulting in:
  - improved operational efficiencies
  - better resource utilisation
  - schedule adherence reporting

"The system is very user friendly, from all aspects, and is also a great operation tool from both a planning and an everyday operational system standpoint," Ms Mackinnon said. "The ability to monitor not only on the contractor level but as well as the County Staff level really gives us the ability to control our buses. It also allows us all to answers questions on status in a timely manner, and should we receive a complaint we can look up the check on a route to see what may have happened."



**CONNEXIONZ**  
Real Time Tracking