

2010: The tide of new tramways continues

Michael Taplin takes a closer look at the new tramways opening in 2010, plus the ones that could have been and the reasons for their delays.

The article in the February issue of *Tramways & Urban Transit* showed that in addition to 136 new tramways opened since 1978, another 45 were under construction. The question is, which of these will we be able to ride on before the end of 2010?

Prediction is a black art, and already a few of those have drifted into 2011, or beyond, for a variety of reasons. Building a new tramway is a complex procedure at the mercy of many factors, from politicians to finance to the weather, and even the strongest project management skills can wilt from time to time. So, with these caveats accepted, here is the prediction of which schemes will be cutting the ribbon this year – a couple are on very safe ground as they have already happened!

What might have been...

Projects that could have opened in 2010, but have now slipped into 2011, include the new tramway in Anger, France (12km/7.4 miles) dummy running from December before opening in January; the first phase of the Algiers tramways in Algeria (16.3km/10 miles) and the much delayed and highly-controversial Jerusalem project in Israel (13.8km/8.5 miles first trial 24 February, passenger service now April 2011).

Dubai should open its innovative 10km (6 mile) line in the first quarter of 2011, while Hampton Roads Transit in Norfolk, VA, USA will open its 11.8km Tide LRT system around the same time after months of delay (11.8km). For Italy one can never be sure, but Palermo should be running trams before the end of 2011. **TAUT**



Bergen's 9.8km Bybanen tramway opens on 22 June. Here Stadler Variobahn 201 (one of 17 LRVs to operate the system) is seen on test in early January 2010. Trygve Bertelsen Wiig

Vancouver, Canada: 21 January 2010

The first on the list is interesting; not only did Vancouver have the first new tramway of 2010, but it has also already closed.

The Downtown Streetcar Project was a demonstration of modern tramway technology attached to the opportunity afforded by the Winter Olympics and Paralympics and saw two

new Bombardier *Flexity* trams loaned from Brussels running on 1.8km (1.1 miles) of track linking Granville Island and Olympic Village from 21 January to 21 March as the Olympic Line.

The former railway alignment, completely rebuilt for the project, was already

in use each summer by the Downtown Historic Railway museum tramway group, which will gain the immediate benefit from the investment.

However Vancouver's politicians have a vision of extending the line by 3km (1.85 miles) to Science World, then later another 2km (1.25 miles) to Waterfront station and perhaps eventually to Stanley Park. Clearly this would require serious funding for construction costs and a fleet of modern trams.

This in turn will need the commitment of Translink, the regional transit authority, funded by BC and subject to all sorts of political pressure. Hitherto Translink has concentrated its major transit funding on Skytrain automated light rapid transit. Hopefully the success of the Olympic Line demonstration project will promote a change of heart.

SYSTEM FACTS

- **Route:** 1
- **Cost:** CAD8.5m (USD8.3m)
- **Length:** 1.8km
- **Dates:** 21/1/10–21/3/10
- **Gauge:** 1435mm
- **Power:** 600 V dc
- **Rolling stock:** Two Bombardier *Flexity* LRVs
- **Operator:** City of Vancouver/ Bombardier

'Vancouver's politicians have a vision of extending the line by 5km in the longer term'

Thierry Hamal



Firenze, Italy: 14 February 2010

The historic city of Firenze (Florence) last saw trams in 1958. With the Italian government making funding available for new tramways, late 1990s studies identified opportunities for a network, which won local support. Turning this into reality took time, and in December 2004 work began on the EUR170m line 1, 7.4km (4.6 miles) from the main railway station to Scandicci in the west.

A consortium including Paris transport operator RATP and the local bus operator ATAF has the 30-year design/build/operate contract and AnsaldoBreda has supplied 17 *Sirio* low-floor trams. Building new tramways in Italy rarely seems a smooth process and the expectation of carrying passengers in 2008 was soon thwarted by a series of delays, some related to the infrastructure, that included a new tram-only

bridge over the River Arno, and rolling stock; test running did not start until March 2009.

So it was Valentine's Day in 2010 before the first fare-paying passengers climbed aboard. Meanwhile the programme for routes 2 and 3 has been mired in politics for years, including the decision on whether or not to lay tracks past the historic Duomo (cathedral).

SYSTEM FACTS

- **Route:** 1
- **Cost:** EUR170m
- **Length:** 7.4km
- **Date:** 14/2/10
- **Gauge:** 1435mm
- **Power:** 750 V dc
- **Rolling stock:** 17 AnsaldoBreda *Sirio* LRVs
- **Operator:** GEST (*Gestore del Servizio Tramviario di Firenze*)



Daniele Quaglia

'Not only did Vancouver have the first new tramway of 2010, but it has also already closed. Hopefully the success of the Olympic Line demonstration project will convince Vancouver's politicians to look at LRT more closely'

Austin, USA: 22 March 2010

The Texan city of Austin has a reputation for liberal thought in a state renowned for right-wing attitudes. Nevertheless agreement to spend taxpayers' money on public transit is an uphill struggle for Capital Metro – the public transit provider set up in 1985 to take over the failing private bus company.

In 2004 voters endorsed a master plan including MetroRail, diesel light rail on an existing railway north to the town of Leander. USD105m was spent making tracks suitable for commuter rail and building a link on to city centre streets in

SYSTEM FACTS

- **Route:** 1
- **Cost:** USD300m
- **Length:** 51km
- **Date:** 15/3/10
- **Gauge:** 1435mm
- **Power:** Diesel
- **Rolling stock:** Six Stadler *GTW2/6*
- **Operator:** Herzog Rail Services



David Dobbs

Austin, where the terminus is by the Convention Centre.

In October 2005 a USD32.3m order for six diesel cars was placed with Stadler; updated versions of those on the RiverLine (Trenton – Camden) in New Jersey. The hope was that

public service could start in late 2008, but this was put back to 30 March 2009. Then CapMetro and the chosen operator Veolia became embroiled in a dispute with the FTA over federal oversight and standards. This, and related signalling issues,

took a year to sort out, including CapMetro parting company with Veolia and giving the operating contract to Herzog Rail Services.

After three weeks of dummy service, 22 March was the opening date, with five days of free service.

Bergen, Norway: 22 June 2010

On the country's west coast, Bergen is Norway's second-largest city and the first to establish a system of tolled roads in a ring around the central area in 1986. Part of



the funding for a new tramline (the city had trams until 1965) has come from the toll revenue, with the National Transport Plan approving expenditure of NOK2.2bn (EUR274m) in 2005.

Construction work on the 9.8km (16 mile) initial segment started in August 2007, running south from Sentrum (the city centre) to the suburb of Nestun. Already agreed is a further extension to Rådalen in 2012, and it is hoped to reach a final terminus at Fliesland airport in 2015. The depot is at Kronstad and there are two tunnels

(1.1km and 1.2km) to overcome Bergen's hilly topography.

The infrastructure is owned by the County of Hordland, and the operator is the Fjord 1 Partner (a joint venture of Keolis and the local ferry/bus operator). Bergen is Norway's only trolleybus operator, and on 22 June becomes one of the few cities in the world to operate tram, trolleybus and motorbus. December 2009 saw the delivery of the first of 17 Stadler *Variobahn* trams from Germany (the original order for 12 was increased when the

SYSTEM FACTS

- **Route:** 1
- **Cost:** NOK2.2bn (EUR274m)
- **Length:** 9.8km
- **Date:** 22/6/10
- **Gauge:** 1435mm
- **Power:** 750 V dc
- **Rolling stock:** 12 + five Stadler *Variobahn* LRVs
- **Operator:** Fjord 1 Partner

Rådalen extension was approved) that will provide a five-minute service on the new line at peak periods.

Lyon (RhônExpress): 9 August 2010



The French city of Lyon has been operating its second-generation tramway since December 2000 and now has a three-line network. However this year sees a new operator and a new line opening, albeit the service will run over the existing T3 for 14.6km from Part Dieu railway station to Meyzieu in the eastern suburbs.

Originally christened LESLYS (LYS is the code for Lyon-Saint-Exupéry airport), the new service offers an express connection every 15 minutes between Lyon and its airport using 100km/h cars to provide a 25-minute journey time (the present bus takes 40 minutes).

In January 2007 a 30-year concession to finance, build and operate the link was awarded

to the consortium RhônExpress (Vinci, Veolia, Vossloh, Cegelec, Caisse des depots), which first had to build 8.4km/5.2 miles of new infrastructure and buy six new cars, an order that went to Stadler in Berlin for a variation of its *Tango* design originally developed as a *Stadtbahn* car for Bochum-Gelsenkirchen.

SYSTEM FACTS

- **Route:** 1
- **Cost:** EUR31.35m
- **Length:** 8.4km
- **Dates:** 9/8/10
- **Gauge:** 1435mm
- **Power:** 750 V dc
- **Rolling stock:** Six Stadler *Tango* LRVs
- **Operator:** RhônExpress

Toulouse, France: 30 November 2010

Toulouse is a city in central France that decided in 1985 to adopt rapid transit by building two automatic mini-metro lines using VAL technology, opened in 1993 and 2002.

However it was clear that some corridors did not justify the cost of this expensive solution, and in 2001 it was decided to build a new tramway as a metro feeder to the north-west suburbs (including Blagnac, the home of the French aircraft industry). The last first generation tram in Toulouse ran in 1957.

After the alignment was confirmed and designed, the Declaration of Public Utility came in February 2007, with work starting soon afterwards. Line E runs 10.9km (6.8 miles) from Arenes metro station to Blagnac and Beauzelle, terminating close to the depot at Garossos.

SYSTEM FACTS

- **Route:** 1
- **Cost:** EUR97m
- **Length:** 10.9km
- **Date:** 30/11/09
- **Gauge:** 1435mm
- **Power:** 750 V dc
- **Rolling stock:** 18 Alstom *Citadis* 302 LRVs
- **Operator:** Tisséo

In May 2007 an EUR65.7m order was placed with Alstom for 18 *Citadis* 302 trams, since increased to 24 to allow for a planned second tramline (and a short branch from the existing line to the airport). The tramway has been built and will be operated by the Toulouse public transport operator Tisséo, a partnership between the city and Veolia Transport.



Mulhouse (TramTrain), France: 13 December 2010



H. Daniel

The first two new tramlines in Mulhouse in south-east France opened on 20 May 2006, and the system is being extended. An essential part of the plan adopted in 2004 was an attached tram-train operation to be operated by SNCF and covering the (then) diesel line to Thann and Kruth.

Tram-trains would run over the urban system between Gare SNCF and RP Stricker, then along a third new route (alongside SNCF tracks) to Lutterbach and over newly-electrified SNCF tracks to Thann St-Jacques and later to Kruth; 750 V dc would be used as far as Lutterbach (4km/2.5 miles of new tracks including a stop at the French National Railway Museum) and then 25 kV ac on the remaining 20km to Thann.

Until the electrification is completed, three trains/hour will

run from Mulhouse SNCF, one a diesel *autorail* over SNCF tracks and two tram-trains. The cost of the first phase includes EUR84m for infrastructure and EUR53m for rolling stock. The latter is 12 Siemens *Avanto* dual-voltage LRVs built in France at Lohr Industrie at Duppigheim near Strasbourg and delivered from December 2009.

SYSTEM FACTS

- **Route:** 1
- **Cost:** EUR137m
- **Length:** 24km
- **Date:** 13/12/10
- **Gauge:** 1435mm
- **Power:** 750 V dc / 25 kV ac
- **Rolling stock:** 12 Siemens *Avanto*
- **Operator:** SNCF

Gaziantep, Turkey

We have made the point before that Turkey is far more successful than the UK in getting new tramways up and running, as this latest example shows. Gaziantep, with a population of 1.9 million, is a provincial capital in eastern Turkey that was hardly known to the outside world until it recently became the starting point for the restored rail service to Mosul in Iraq. It is the sixth largest city in Turkey and twinned with Duisburg in Germany.

The mayoral decision to have a tramway came in 2008. Now nearing completion is a 9.3km (5.8 mile) line from Gar TCDD to Universite (with a depot beyond at Son Durak). Built to a budget of YTL33 166m (EUR15.8m), the line will be worked by 15 ex-Frankfurt-am-

Main high-floor Pt class double-ended cars built by Düwag in 1972/3.

These were shipped by rail from Frankfurt to the Tulomas factory in Eskisehir after a rebuild in contemporary style and new orange and white livery before delivery to Gaziantep.

SYSTEM FACTS

- **Route:** 1
- **Cost:** YTL33 166m (EUR15.8m)
- **Length:** 9.3km
- **Date:** Autumn 2010?
- **Gauge:** 1435mm
- **Power:** 650 V dc
- **Rolling stock:** 15 ex-Frankfurt-am-Main Pt
- **Operator:** City

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