

= Edinburgh Trams =

Edinburgh Trams is a tramway in Edinburgh , Scotland , operated by Transport for Edinburgh . It is a 14 @-@ kilometre ( 8 @.@ 7 mi ) line between York Place in New Town and Edinburgh Airport , with 15 stops .

Construction began in June 2008 , and after encountering delays it opened on 31 May 2014 . The scheme had an initial estimated cost of £ 375 million in 2003 , but by May 2008 , when contracts were signed , the cost had risen to £ 521 million . The final cost after delays was £ 776 million .

= = History = =

Edinburgh Corporation Tramways ran from 1871 until 16 November 1956 . After that date , public transport consisted of buses and a limited network of commuter rail lines . Towards the end of the 20th century , there was revived interest in trams and networks were introduced in Birmingham , Croydon , Manchester , Nottingham and Sheffield .

Proposals for a tram network were made in the 1990s , and a plan to build a line along Princes Street and Leith Walk to Newhaven was proposed in 1999 by the City of Edinburgh Council , Lothian and Edinburgh Enterprise and the New Edinburgh Tramways Company .

= = = Proposals for the Edinburgh tram network = = =

A 2001 proposal envisaged three routes , lines 1 , 2 and 3 . The first was a circular route around the northern suburbs , and the others were radial routes to Newbridge in the west and Newcraighall in the south . All lines would have passed through the city centre . In May 2004 , a 15 @-@ year operating contract was awarded to Transdev , to operate and maintain the tram network . This contract was cancelled in 2009 .

Two bills to reintroduce a tram network were passed by the Scottish Parliament in March 2006 . Lines 1 and 2 received parliamentary permission , but funding the entire network was deemed impossible . Line 3 , to be paid for by a proposed Edinburgh congestion charge , was scrapped when the charge was heavily defeated in a referendum and construction of the remaining two lines was split into four phases :

Phase 1a 18 @.@ 5 @-@ kilometre ( 11 @.@ 5 mi ) from Newhaven to Edinburgh Airport via Princes Street , combining parts of lines 1 and 2

Phase 1b 5 @.@ 6 @-@ kilometre ( 3 @.@ 5 mi ) from Haymarket to Granton Square via Crewe Toll , comprising most of the remainder of line 1

Phase 2 linking Granton Square and Newhaven , completing the line 1 loop

Phase 3 extending the airport line to Newbridge , completing line 2

The future of the scheme came under threat in 2007 , when the Scottish National Party ( SNP ) published its manifesto for the Scottish Parliamentary election . The party made clear its intention to cancel the scheme , along with the Edinburgh Airport Rail Link , to save £ 1.1bn.

Following a lost vote in the Scottish Parliament , the SNP @-@ led minority Scottish Government agreed to continue the line from the airport to Leith on condition that no more public money would be supplied . A report by Audit Scotland , commissioned by the Scottish Government , confirmed that the cost projections were sound . The cost of the scheme in 2003 was estimated at £ 498 million , £ 375 million in funding from the Scottish Government and £ 45 million from Edinburgh Council .

On 25 October 2007 , the council approved the final business case . Approval was given on 22 December 2007 for TIE to sign contracts with CAF to supply vehicles and BBS ( a consortium of Bilfinger Berger and Siemens ) to design and construct the network . Contract negotiations finished in April 2008 , and construction started in June 2008 . By this stage the cost of the project was estimated at £ 521 million . Funding problems and political disputes led to the scaling back of the original plans . In April 2009 , the council cancelled phase 1b , citing revenue shortfall created by the economic slowdown to save an estimated £ 75 million . The Granton extension was also cancelled .

== = Construction : 2007 ? 2012 = = =

Until August 2011 , the project was overseen by Transport Initiatives Edinburgh ( TIE ) , a company wholly owned by the City of Edinburgh Council , who were responsible for project @-@ managing the construction of the tramway .

After the draft business case was accepted by the Scottish Government in March 2007 , initial construction work commenced in July 2007 , with the diversion of underground utilities in preparation for track @-@ laying in Leith . These works followed a plan by System Design Services ( SDS ) , a joint design team led by Parsons Brinckerhoff and Halcrow Group .

In May 2008 , final contracts to build the tram system were awarded to BSC , a consortium of Bilfinger Berger , Siemens and Spanish tram builder Construcciones y Auxiliar de Ferrocarriles ( CAF ) .

The tramway uses a mix of street running and segregated off @-@ road track , with conventional tram stop platforms . Stops are fitted with shelters , ticket machines , lighting and CCTV . The network is operated from a depot in Gogar , close to the A8 roundabout , north of Gyle Centre tram stop .

The route of the line required the construction of bridges to cross railway lines at Edinburgh Park and Stenhouse , and a tunnel under the A8 near the Gogar roundabout . A bridge at Balgreen was widened . Works to build a tram interchange at Haymarket station involved the demolition of a Category C ( S ) listed building , the former Caledonian Alehouse on Haymarket Terrace .

Some on @-@ street track was laid in a special foundation with cobbled road surfacing designed to be sympathetic with the style of Edinburgh streets but was removed in many places due to objections from cyclists . The trams are powered by overhead cables attached to purpose @-@ built poles or mounted on the sides of buildings . Nine electrical sub @-@ stations were planned for the line to Newhaven , both underground and above @-@ ground but only five were built after the line was truncated at York Place .

== = = Project revisions and delays = = = =

In 2008 and 2009 , the project met with delays to work on tramway infrastructure . Phase 1b of the project was cancelled because of a funding shortfall in April 2009 . Contractual disputes delayed track @-@ laying in the city centre . In December 2009 , media reported that the project budget was running over £ 545 million , and the system was unlikely to come into operation until February 2012 or later . The operating contract with Transdev was cancelled in December 2009 to reduce costs and it was announced that the trams would be operated by Edinburgh Trams Limited , a subsidiary of Transport for Edinburgh . In March 2010 , Bilfinger Berger announced that the estimated completion date would be in 2014 .

== = = Contractual disputes = = = =

In February 2009 , work on the Princes Street section stopped due to contractual disagreements between TIE and BSC after the latter submitted a request for an additional £ 80 million of funding . Edinburgh Council believed the contractors ' claims were unjustified as they had agreed to fixed @-@ price contracts . After negotiations , BSC agreed to commence construction in March 2009 within the original budget , although disagreements remained . Work restarted and line construction went ahead .

In August 2009 , TIE began legal proceedings against the BSC consortium over delays to the project , and track @-@ laying on Leith Walk , Shandwick Place and Haymarket was suspended . At issue were alleged changes to BSC 's work specification , including track works on Princes Street and £ 5 million additional costs for foundation work near Murrayfield Stadium . The BSC consortium alleged that TIE had not diverted the underground utilities in time for track @-@ laying to begin , breaching contractual agreements and costing the consortium additional staffing expenditure .

In January 2010 the independent arbiter found in favour of TIE on some points , but on most of the disputed issues ruled in favour of BSC and awarded the consortium 90 % of its additional costs , estimated to be up to £ 80m .

Delays in track laying and depot construction affected vehicle testing . By September 2009 , construction was reported to be nine months behind schedule , and CAF was due to deliver the first trams from its factory in Spain . With key project dependency out of synchronisation , TIE held discussions with Transport for London about delivering the trams to Croydon to conduct operational tests on the Tramlink network . Tram vehicle testing commenced in March 2010 on the Siemens test track in Wildenrath , Germany . The tests included recreating the steep gradients of Leith Walk , and using weights to simulate the heavy passenger load expected during a Murrayfield match day .

= = = = Funding crisis = = = =

Following further disputes and delays , it was reported in March 2010 that Edinburgh Council was considering cancelling the contract with Bilfinger Berger . By June 2010 , the project 's cost had risen to £ 600 million . Council project managers were reported to be in crisis talks , considering options including : borrowing £ 55 million to fund the increased costs ; phasing the introduction of the tram line , so that trams would initially run between the airport and Haymarket ; and terminating the contract with Bilfinger Berger . The council asked TIE to draw up costs for truncating the line at four places : Haymarket station , York Place , the foot of Leith Walk or Ocean Terminal .

Work resumed in May 2011 at priority locations , Haymarket Yards and Gogar , while the project 's future was decided by the council . In August 2011 it was announced TIE would be disbanded and consultants Turner & Townsend would manage the project .

On 30 June 2011 , Edinburgh Council voted to continue the line between Edinburgh Airport and St Andrew Square . Costs rose to an estimated £ 770m , leaving the council with a shortfall of more than £ 200m . The option to scrap the project was considered , but rejected . On 25 August 2011 , the council voted to cut the line to run between the airport and Haymarket , reducing the expected cost to £ 715m . A week later , after the Scottish Government threatened to withhold £ 72 million of funding , the council reversed its decision , restoring the terminus at St Andrew Square . On 29 November 2011 it was announced that the eastern terminus would be at York Place instead of St Andrew Square ; the intention had been to build the tracks to a reversing point at York Place ( without a stop for passengers ) . Extending passenger services from St Andrew Square to York Place would enable Broughton Street , Picardy Place and the surrounding area to be better served at comparatively little additional cost .

The first electric wires were energised in October 2011 within the depot at Gogar . Testing trams began in December 2011 near the depot at Gogar , on a 500 metres ( 550 yd ) length of track . On 15 December 2011 , the contractors handed the depot to the City of Edinburgh Council .

The first completed section of line , between the depot and Edinburgh Airport , was used to test a tram at full speed on 19 December 2012 .

With extra interest payments factored in , the cost of the line is expected to exceed £ 1 billion .

= = = = Criticism = = = =

Delays in construction were criticised by businesses , who claimed their income was damaged by long @-@ term road closures in the centre of the city , and also by some residents .

Cycling groups voiced safety concerns after cyclists suffered accidents when bicycle wheels became caught in the track . They reported the road surface around the tracks was crumbling , raising further safety problems . In response , TIE promised to carry out repairs and Edinburgh Trams agreed to fund special training for cyclists . Further safety concerns were raised by residents along the routes about the suspension of overhead electric cables from residential buildings , and some property owners refused permission for cables to be attached .

To remedy crumbling tarmac along the tracks on Princes Street , the road was closed in September 2011 and remained closed for ten months . A road closure between Haymarket and Shandwick

Place in March 2012 led to complaints from businesses and residents . It remained closed until October 2013 .

== Completion : 2013 ? 2014 ==

From late 2012 , work continued mostly on schedule . More than 150 metres ( 160 yd ) of flawed concrete trackbed had to be replaced between Shandwick Place and Haymarket . In June 2013 , overhead electric wires were installed on the city centre portion of the route . This was considered the last major step in the construction process .

Controversy erupted over concessionary travel for the elderly and disabled . Originally , it was planned that concessionary travel , that is the ability of those with a Scottish National Entitlement Card to travel on public transport free @-@ of @-@ charge , was not going to be offered on the tramway . This was despite the fact that Edinburgh Trams is to be run by Lothian Buses , who are mandated to offer free travel to those with concession cards on all their bus routes . This revelation quickly caused city leaders to support an Edinburgh Evening News campaign to ensure that concessionary travel would be offered on the new tramway . City transport convener Lesley Hinds stated " People in Edinburgh have paid through their council tax and their taxes for the trams to get up and running and it would be wrong for a large proportion of the population not to be allowed to use their concessionary bus pass " .

Despite this , the Scottish Government refused to pay for concessionary travel for the tram scheme , as it does for all bus routes in Scotland . Talks between the Scottish Government and Edinburgh Council eventually decided that concession cards should be valid for tram travel , but that they should be paid for by the Council instead of the Government . It was revealed on 15 August 2013 that the cards would be valid , and that travel would be paid for by Edinburgh Council . However , only people with cards issued in Edinburgh would be able to use them . This compromise upset many people in the Lothians , who often commute or travel into Edinburgh .

Works on the tram scheme were running two months ahead of schedule by September 2013 , when Edinburgh Council announced the tramway would open by May 2014 . All tram and road works were completed by 19 October with testing of the trams between the depot and Edinburgh Park commencing on 8 October 2013 . This was followed by the energising of tram wires from Bankhead tram stop to York Place on 19 November , marking the first time that the route was completely energised . Testing along the full length of the route began on 5 December .

The tramway opened to passengers on 31 May 2014 .

== Post @-@ completion ==

A non @-@ statutory public inquiry to scrutinise the delivery of the project was announced on 5 June 2014 . This was subsequently upgraded by the Scottish Government on 7 November 2014 to a statutory inquiry to ensure that key personnel would provide evidence . Edinburgh Council stated on 17 March 2014 that works would be conducted along Leith Walk to prepare it for a possible future extension of tram service . In December 2014 , Edinburgh Council ordered a detailed business case for extending the line to Leith . The council said in July 2015 that three options for an extension to Leith had been costed . These were a £ 144 @. @ 7 million extension to Newhaven , a £ 126 @. @ 6 million extension to Ocean Terminal , or a £ 78 @. @ 7 million extension to the Foot of the Leith Walk . On 19 November 2015 , the Council received the backing of the City Chambers to extend the line to Newhaven , as originally intended .

== Rolling stock ==

A £ 40 million contract to build 27 Urbos 3 trams , sufficient for phase 1a and ( unbuilt ) 1b lines , was awarded to CAF . When the line was cut back to York Place , only 17 trams would be needed . An unsuccessful attempt was made in 2011 to lease ten trams to Transport for London for use on Tramlink .

The trams are bi-directional , 42 @ 8 metres ( 140 ft 5 in ) long and with low floor access to meet UK Rail Vehicle Access Regulations for disabled people . Each tram has a capacity of 250 , allowing for 78 seated and 170 standing passengers and 2 wheelchairs .

A full size mockup of the front of the tram was constructed in 2009 and displayed on Princes Street for public viewing , moving to Constitution Street at the foot of Leith Walk in April 2009 .

In April 2010 , the first tram was delivered and displayed at the Princes Street stop at the bottom of The Mound . It was moved to open storage in Broxburn . The 27th tram was delivered in December 2012 .

All of the trams are painted white with rose madder and platinum stripes , a livery mandated by Transport for Edinburgh shared with minor variation by Lothian Buses .

= = Operations , fares and ticketing = =

= = Route = =

The 14 kilometre ( 8 @ 7 mi ) route begins running on street at York Place , in the city centre . It turns into North St Andrew Street , crosses St Andrew Square . From the square , it heads southeast into Princes Street , and west along the street toward Haymarket , via Shandwick Place , Atholl Place , and West Maitland Street . At Haymarket , the route heads onto a segregated track parallel to the Glasgow to Edinburgh mainline . It follows the railway line west for about 6 @ 8 kilometres ( 4 @ 2 mi ) , to Edinburgh Park railway station . There , it leaves the railway line on a segregated track and heads north to Gogar Roundabout from where it heads northwest via Ingliston Park and Ride to Edinburgh Airport , where it terminates .

An additional tram stop is planned to open in December 2016 in the Gogar area , between the Gyle Centre and Gogarburn tram stops . This stop , to be called Edinburgh Gateway , will be built alongside a new railway station on the Fife Circle Line to form a transport interchange between Edinburgh Trams and the Fife Circle and Edinburgh to Aberdeen Lines .

= = Fare structure = =

Ticketing and fares are integrated with Lothian Buses . The single fare is the same as on Lothian Buses , and day tickets and Ridacards are valid on trams and buses . A single journey between any two stops with the exception of Edinburgh Airport costs £ 1 @ 60 for adults and 80p for children . For travel including the Edinburgh Airport tram stop , a single fare is £ 5 , and an open return ticket is available for £ 8 .

The " Ridacard " is a smartcard season ticket issued by Transport for Edinburgh ; it is valid on both Edinburgh Trams and Lothian Buses ( available for 1 week , 4 weeks or annually ) . On 1 September 2014 , a rechargeable pre-paid smartcard for single journeys on both buses and trams , called " Citysmart " , was introduced .

Free travel is available to holders of City of Edinburgh Council issued Scottish National Entitlement Cards which are eligible for concessionary travel , and for a companion travelling with the cardholder of National Entitlement Cards with a companion entitlement . Passengers with National Entitlement Cards eligible for concessionary travel but issued by other local authorities are not offered any fare concession , with the exception of blind or visually impaired cardholders .

An onboard fare of £ 10 is charged to passengers who have not pre-purchased a ticket or validated either a Ridacard , a National Entitlement Card or an m-ticket before boarding .

= = Ticket machines = =

At the request of Lothian Buses , installation of 30 ticket machines at key bus stops began in 2007 . Passengers had to purchase tickets before boarding the bus , reducing dwell times but were not popular with users and were scrapped in 2011 . Consideration was given to installing similar on

@-@ street ticket machines and new , advanced machines ( capable of reading smartcards and accepting credit / debit cards ) were installed in early 2014 at each tram stop . The new ticket machines are the Galexio @-@ Plus type supplied by the French @-@ based company Parkeon .

= = = Bikes on board = = =

In May and June 2015 cyclists were allowed to board the trams with their bikes , during a trial period which was supported by cycle campaign groups Spokes and Pedal on Parliament . Following this , Edinburgh trams became the first light rail network in the UK to permit the carriage of bikes on a permanent basis , with up to two bicycles being allowed per tram outwith peak hours ( 7.30am to 9.30am , and 4pm to 6.30pm ) and excluding the festival period ( 7 ? 31 August ) and other large events .

= = = Staffing = = =

Fifty @-@ two ticket inspectors have been recruited to prevent fare dodging . Edinburgh Council is aiming for a 3 % fare evasion rate , lower than any other tramway in Britain . Thirty @-@ two drivers were employed , after passing psychological tests designed to eliminate risk @-@ takers .

= = = Journey times and frequency = = =

Services operate between 05 : 00 and midnight , at 8- to 10 @-@ minute intervals from Monday to Saturday and at 12 @-@ 15 @-@ minute intervals on Sundays . Journey times are approximately 40 minutes from the city centre to the airport . The first morning and last evening services commence and terminate at the Gyle Centre .

= = = Financial performance = = =

During 2014 Edinburgh Trams lost almost £ 450 @, @ 000 , though this was less than expected due to higher than predicted passenger numbers .