



Study on providing public transport in cross-border regions – mapping of existing services and legal obstacles

Case Study report

Cross-border tram line 17 Geneva (Switzerland) – Annemasse
(France)

Contract: 2019CE160AT093

Written by
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Table of Contents

1. Introduction.....	6
2. Features and benefits of the service.....	6
2.1. Geographic context and scope of the service.....	7
2.2. Demand for and benefits of the service	16
2.3. Governance	18
2.4. Operational provisions	26
3. Obstacles and solutions	33
3.1. Delayed commissioning of the cross-border tramway line 17.....	33
3.1.1. Impact of the obstacle.....	33
3.1.2. Possible solutions.....	34
4. Conclusions and lessons learnt.....	35
References.....	36
Documents.....	36
Websites	37
Interviews.....	39

List of tables

Table 2.1	Characteristics of the business model	6
Table 3.1	Overview of obstacles	33

List of figures

Figure 2.1	Line and stops of tram 17 Geneva - Annemasse.....	7
Figure 2.2	Territory covered by Annemasse city and the Agglomeration Community Annemasse	8
Figure 2.3	Canton of Geneva municipalities.....	9
Figure 2.4	Territory of Greater Geneva	10
Figure 2.5	Léman Express network (L1 - L6)	12
Figure 2.6	Domestic and cross-border TPG-lines (2021)	13
Figure 2.7	Geneva tramway network (December 2019)	14
Figure 2.8	Mobility system for the Agglomeration Community Annemasse	15
Figure 2.9	Commissioning of cross-border tramway line 17	17
Figure 2.10	Léman Pass tariff zones (December 2020)	25
Figure 2.11	Tramway line 17 in France (phases 1 and 2).....	27
Figure 2.12	Financial contributions for phase 1.....	28

1. Introduction

This case study report presents the business model for the cross-border tram service on tramway line 17 between the city centres of Geneva (Switzerland) and Annemasse (France).

This report is part of a series of 31 case studies developed in the framework of the study 'Providing public transport in cross-border regions – Mapping of existing services and legal obstacles'. Spatial Foresight in cooperation with TCP international, TRT trasporti e territorio and EureConsult completed this study for the European Commission's DG REGIO.

The case studies highlight a variety of business models for cross-border public transport services. This includes governance arrangements and operational provisions to develop the service and address demand in border regions. These aspects will be introduced in section 2, as well as the territorial scope of the service. Section 3 presents key obstacles related to the business model as well as solutions. Section 4 is about lessons learnt from this case.

This case study covers:

- joint planning and development of a comprehensive public passenger transport system for the Greater Geneva cross-border agglomeration with trains, rapid transit trains, trams, buses and boats;
- profound changes in Greater Geneva with commissioning of the Léman Express in December 2019, which has become Europe's largest cross-border rapid rail transit system;
- the specific function of cross-border tramway line 17 'Geneva - Annemasse' within Europe's most developed and dense cross-border public transport system;
- high level of cross-border tariff integration in Greater Geneva, including line 17;
- the set-up of cross-border tramway line 17 that also involved Swiss funding for infrastructure investments on French territory;
- a bi-national model for planning and ordering passenger transport services on line 17 that is integrated through a cross-border cooperation convention and a joint political steering committee;
- the start of the cross-border tramway service in December 2019, which shortly afterwards became a big success in terms of passenger use.

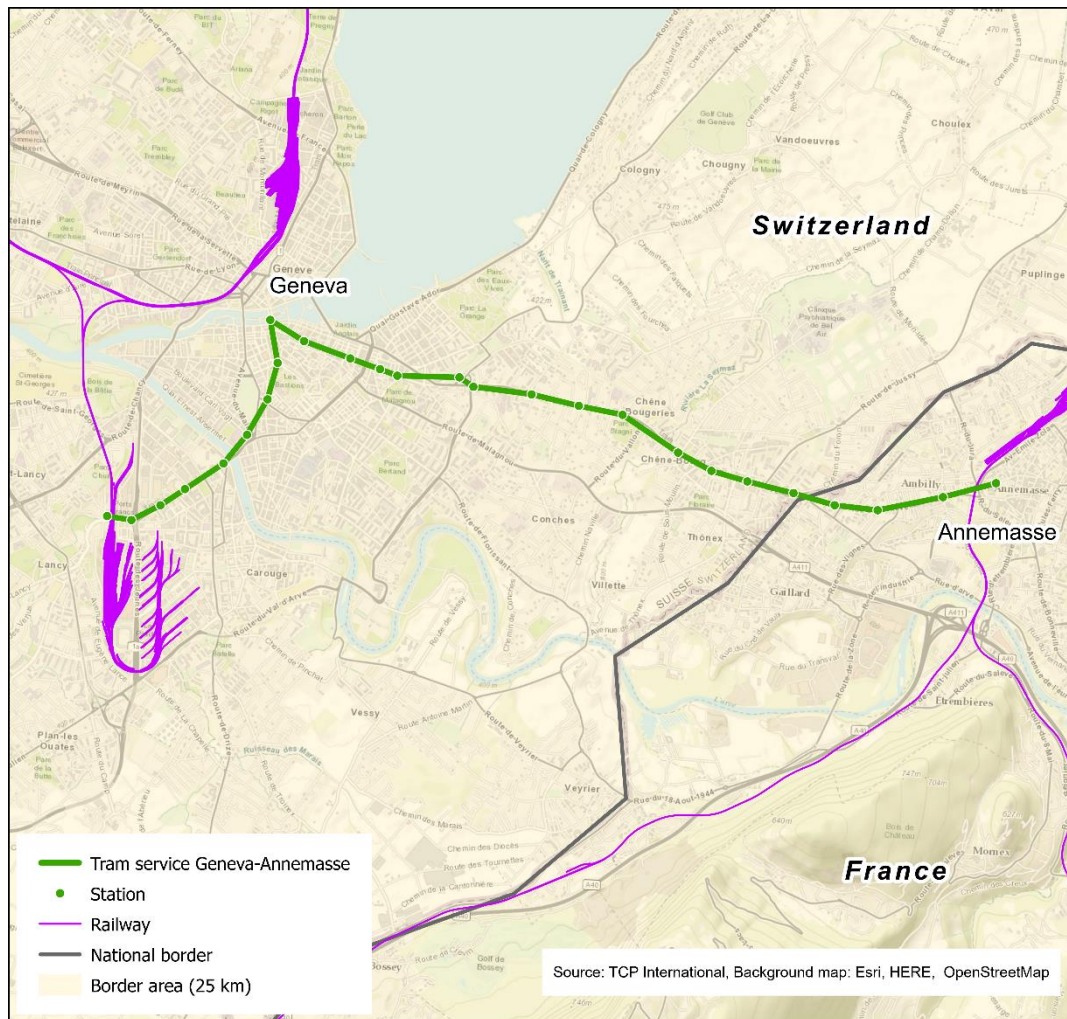
The main sources used for elaborating this case study were published documents and websites. The latter were particularly important so the case study adequately considers recent developments. Moreover, very valuable and complementary information came from an interview with the public transport director at the Office of Transport of the Canton of Geneva in Switzerland. Finally, the case study evidence on tramway line 17 has also been cross-checked by the cantonal Office of Transport.

2. Features and benefits of the service

Table 2.1 Characteristics of the business model

Transport service	Cross-border tram line 17 'Geneva - Annemasse'
Mode of transport	Tram
Service provider(s)(operator)	Geneva Public Transports (Transports Publics Genevois, TPG)
Location	From Geneva-Lancy Pont Rouge station (Republic and Canton of Geneva), Switzerland, to Annemasse-Parc Montessuit (Département Haute-Savoie; region of Auvergne-Rhône-Alpes), France
Date when the service started	December 2019

Figure 2.1 Line and stops of tram 17 Geneva - Annemasse



Source: TCP International

2.1. Geographic context and scope of the service

The cross-border tramway line 17 connects the city centre of Geneva on the Swiss side (starting point at Lancy-Pont-Rouge-Gare) with the city centre of Annemasse on the French side (current end-point at Parc Montessuit). The cross-border tram service started in December 2019 and operates in a densely populated cross-border urban area in parallel with many other domestic and cross-border public transport services provided by different actors and at various territorial scales.

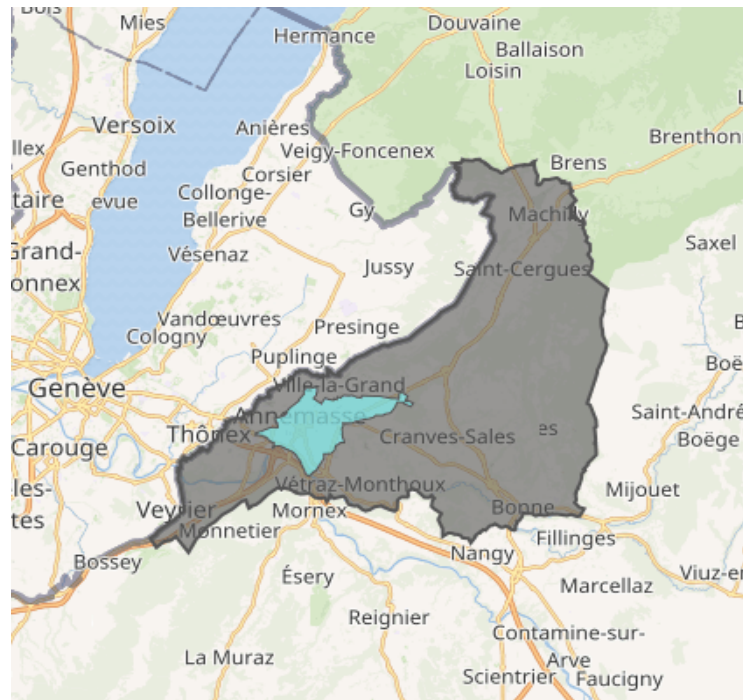
Territorial context

The city of Geneva (Genève) is located where the River Rhône exits Lake Geneva, while the city of Annemasse is east of Geneva just opposite the French-Swiss border (see Figure 2.2, blue-shaded area).

The city of Annemasse¹ is the second most populated municipality in department of Haute-Savoie (part of Auvergne-Rhône-Alpes Region), after the department capital city Annecy. In 2018, Annemasse had 36,250 inhabitants with a population density of 7,279 inhabitants per km².

Since 1 January 2008, the city of Annemasse and 11 other neighbouring municipalities have formed the inter-municipal Agglomeration Community Annemasse (Annemasse - Les Voirons Agglomération or Annemasse Agglo)². The agglomeration covers 78.20 km² and has a population of 90,378 (2018), resulting in a population density of 1,156 inhabitants per km² (see Figure 2.2, grey-shaded area)³.

Figure 2.2 Territory covered by Annemasse city and the Agglomeration Community Annemasse



Source: Wikipedia maps⁴

Geneva is the second largest Swiss city after Zürich, with 205,007 inhabitants and a population density of 12,902 inhabitants per km² at the end of 2020. Geneva is also the capital of the Republic and Canton of Geneva (official denomination). The Canton of Geneva covers Geneva city and a further 45 municipalities (see Figure 2.3), of which 13 have more than 10,000 inhabitants. At the end of 2020, the Canton had 508,774 inhabitants and a population density of 1,802 inhabitants per km². A particularity of Canton Geneva is the northern municipality of Céligny, which forms two exclaves in the Canton of Vaud⁵.

¹ Wikipedia (2021a)

² An agglomeration community (communauté d'agglomération) is a French public establishment for inter-municipal cooperation (établissement public de coopération intercommunale, EPCI), with its own fiscal powers and significant integration of member municipalities for policies (e.g. spatial and urban planning, economic and social development, public transport etc.). The agglomeration community is governed by a community council, composed of municipal councillors from the member municipalities.

³ Wikipedia (2021b)

⁴ Map drawn from: https://fr.wikipedia.org/wiki/Annemasse_-_Les_Voirons_Agglo%C3%A9ration#/map/0

⁵ République et Canton de Genève (2021)

Figure 2.3 Canton of Geneva municipalities



Source: Wikimedia Commons

Agglomeration Community Annemasse and the city of Geneva are part of the much larger cross-border French-Vaud-Geneva agglomeration (Agglomération franco-valdo-genevoise) better known as Greater Geneva (Grand Genève). The agglomeration was for the first time mentioned as a relevant cross-border planning level in the Charter on cross-border spatial development, adopted in 1997 by the Franco-Geneva Regional Committee (Comité régional franco-genevois, CRFG).

Structured cooperation for coordinated development of this functional cross-border agglomeration started in 2004. The development of this cooperation area was subsequently implemented through multi-annual Agglomeration Projects, jointly adopted by all partners of Greater Geneva. The first three projects were signed in 2007, 2012 and 2017, while the 4th project was signed very recently in June 2021⁶.

Governance of these Agglomeration Projects was entrusted to a public-law based cross-border body (GLCT Grand Genève) in 2013, with one of its strategic activities being mobility and public transport (see Box below).

The GLCT French-Vaud-Geneva cross-border agglomeration project (GLCT Greater Geneva)

To establish a governance structure for Greater Geneva agglomeration projects, a specific cooperation instrument provided for by Articles 11-15 of the multilateral Karlsruhe interstate agreement on cross-border cooperation (Groupement local de coopération transfrontalière, GLCT) was used. In 2013, a joint structure under Swiss public law with its own legal capacity and budgetary autonomy was established (GLCT Projet d'agglomération franco-valdo-genevois). Today, this body is commonly referred to as GLCT Greater Geneva (GLCT Grand Genève).

GLCT Greater Geneva has three policy working groups on mobility, spatial planning and ecological transition, while cooperation on the economy, education and health is

⁶ Grand Genève (2021a); Grand Genève (2021b); CEST (2021); République et Canton de Genève (2019), p. 17

dealt with by other existing cross-border cooperation structures. The main role of GLCT is to carry out, organise and manage studies and procedures to implement the Greater Geneva agglomeration project and its further development. GLCT does not implement the agglomeration project but acts as a facilitator that initiates and informs the related political processes and mobilises the competent authorities to carry out infrastructure works or other development measures, while also taking into account the views of civil society.

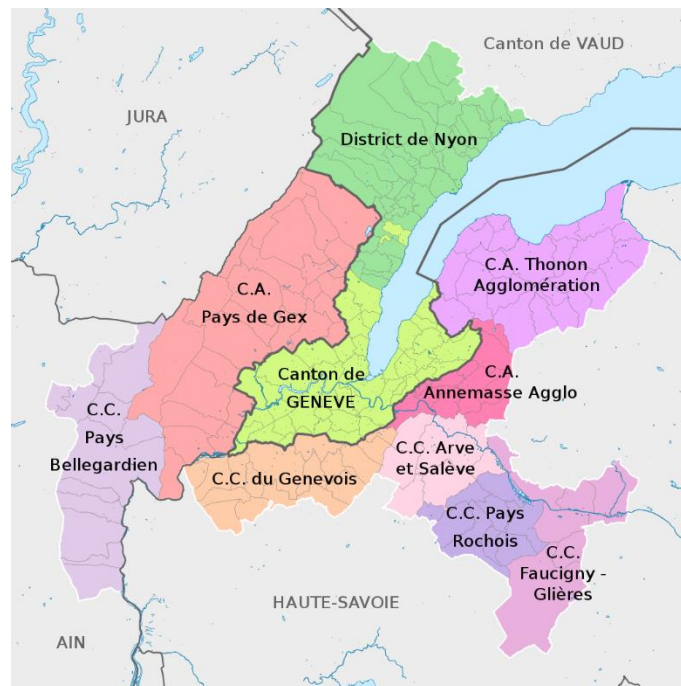
Source: Convention (2011); Grand Genève (2013); CEST (2021); République et Canton de Genève (2019), p. 17; Grand Genève (2021d), pp. 9, 10

Greater Geneva covers 209 municipalities, which together have around 1 million inhabitants⁷ (see Figure 2.4).

On the Swiss side, Greater Geneva covers the Canton of Geneva and the District of Nyon in the Canton of Vaud.

On the French side, Greater Geneva covers eight inter-municipal cooperation structures. Two of these public establishments are in the department of Ain (Communauté de communes du Pays Bellegardien; Communauté d'agglomération du Pays de Gex), while the six others are in the department of Haute-Savoie (i.e. Communauté d'agglomération Annemasse Agglo; Communauté d'agglomération Thonon Agglo; Communauté de communes Arve et Salève; Communauté de communes du Genevois; Communauté de communes Pays Rochois; Communauté de communes Faucigny-Glières).

Figure 2.4 Territory of Greater Geneva



Source: Wikimedia Commons

Cross-border tramway line 17 between Geneva and Annemasse city centres is thus not a singular or isolated public passenger transport service. Instead, it is one element in a strategically developed and highly integrated system of domestic and cross-border public transport services that covers all Greater Geneva.

To clarify the higher-level function and system integration of cross-border tramway line 17, we first take a look at the general mobility strategy for Greater Geneva and then examine the tramway's links with local public transport systems in each of the two urban areas concerned (i.e. Geneva, Annemasse).

Public transport within the mobility strategy for Greater Geneva

The Greater Geneva cross-border agglomeration consists of several centres with varying levels of influence. Mobility improvement thus focuses on developing the transport systems between these centres and within each centre, as well as accessibility to all these systems. Against this backdrop, the general mobility strategy for Greater Geneva is based on several concepts: a dense interurban rail network and urban / interurban public road transport services, a motorway network as the backbone for the road

⁷ Grand Genève (2021d), p. 8

network, interlinking soft mobility networks and finally the development of mobility services⁸.

Strategic orientations for the development of public transport systems in Greater Geneva are jointly discussed within GLCT Greater Geneva and subsequently laid down in Agglomeration Projects. However, the implementation of concrete actions and the proper operation of public transport services in the sub-areas of Greater Geneva are the responsibility of the respective local, inter-municipal or regional actors. Based on this approach, three elements are central for mobility and have also received financial support under the Agglomeration Projects⁹.

(1) The cross-border regional express train network Léman Express is the strategic link between the main centres of Greater Geneva. This and especially the multimodal interfaces around Léman Express stations and selective improvements to the rail network were supported under the 1st and 3rd Agglomeration Projects.

On 19 December 2019, Léman Express started operating on a 230 km long railway network with 6 train lines serving 45 stations in France and Switzerland (see Figure 2.5)¹⁰. The central part of the network is CEVA (Cornavin - Eaux-Vives - Annemasse), a 16 km line linking Geneva to Annemasse. Beyond this central part, the 6 lines connect hubs within Greater Geneva (Coppet, Bellegarde, Thonon, St-Gervais-les-Bains-Le Fayet) and even beyond (Annecy). In parallel to preparing the start of Léman Express, there was a gradual reorganisation and enhancement of other public transport services in Greater Geneva¹¹. Current development projects focus on establishing Park & Ride facilities at certain French stations (i.e. Bons en Chablais, Pérignier, etc.) and on improving station interfaces¹².

(2) The Geneva tramway network is very important for the gradual reorganisation and enhancement of public transport for the Léman Express. Therefore, various projects to extend Geneva tramway lines both within the Canton and across the border were co-financed under the Agglomeration Projects. The first cross-border extension is the Geneva-Annemasse tramway line 17, which was also part financed under the 1st Agglomeration Project.

(3) A final element is the prioritisation of multimodal mobility in Greater Geneva by better integrating soft mobility networks and public transport services. A key element of this strategy element is the Green Route (Voie verte). This large-scale soft mobility project establishes a dedicated lane for cycling and walking on over 38 kilometres km that will connect 17 Swiss and French municipalities. The route starts in France at Saint-Genis-Pouilly north-west of Geneva, passes through the centre of Geneva and ends in the east of Annemasse Agglo. The route received support under the first two Agglomeration Projects and is expected to be completed in 2026.

On 3 June 2021, the partners of GLCT Greater Geneva signed the 4th Agglomeration Project that also includes mobility measures to be implemented between 2024 and 2027. They focus on strongly reinforcing the use of public transport and soft modes of mobility as well as on reducing the nuisance of individual motorised traffic to favour more sustainable local traffic movements and limit urban sprawl. Major attention is put on developing multimodal interfaces in local centres access to stations by soft modes of transport, finalising the public transport network restructuring, developing soft modes to serve local areas and finally on urbanistic actions to accompany the further expansion of Cornavin station¹³.

⁸ Grand Genève (2021c); République et Canton de Genève (2019), p. 17

⁹ Grand Genève (2021c); Grand Genève (2021d), pp. 14-19

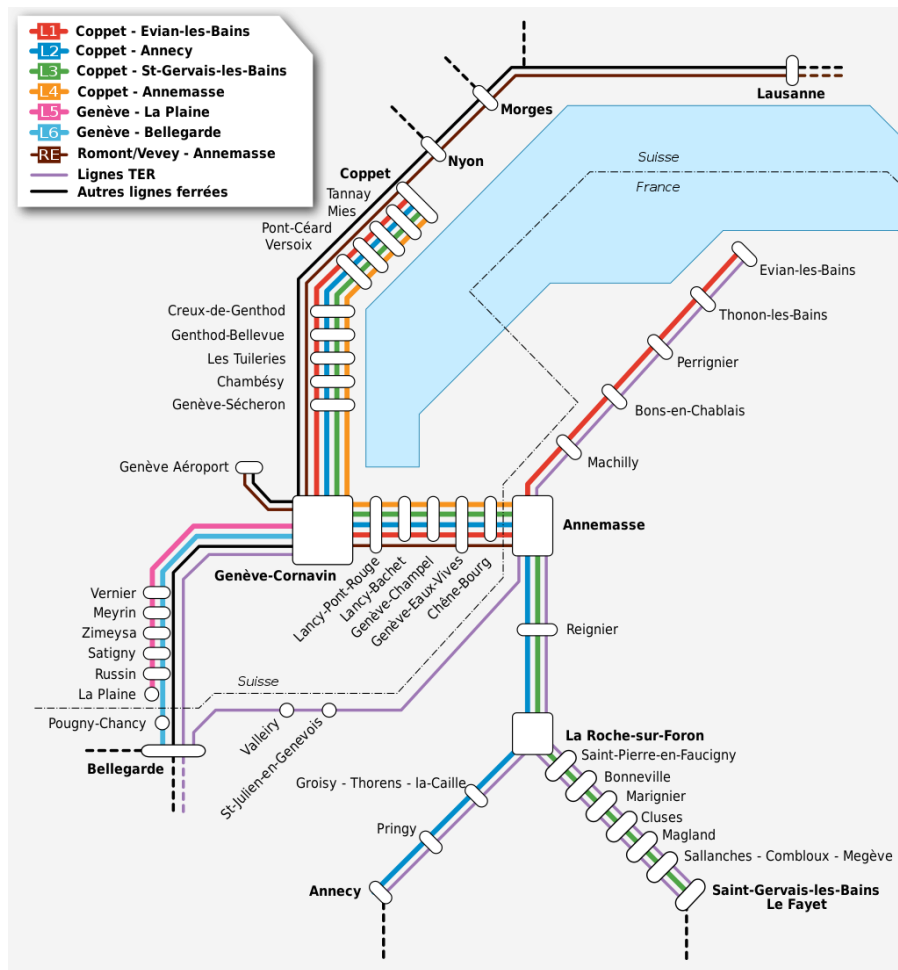
¹⁰ Léman Express (2021)

¹¹ Grand Genève (2019)

¹² Interview with the transport office of the Canton of Geneva

¹³ Grand Genève (2021d), pp. 19-22

Figure 2.5 Léman Express network (L1 - L6)



Source: Wikimedia Commons

Domestic and cross-border public transport in the city and Canton of Geneva

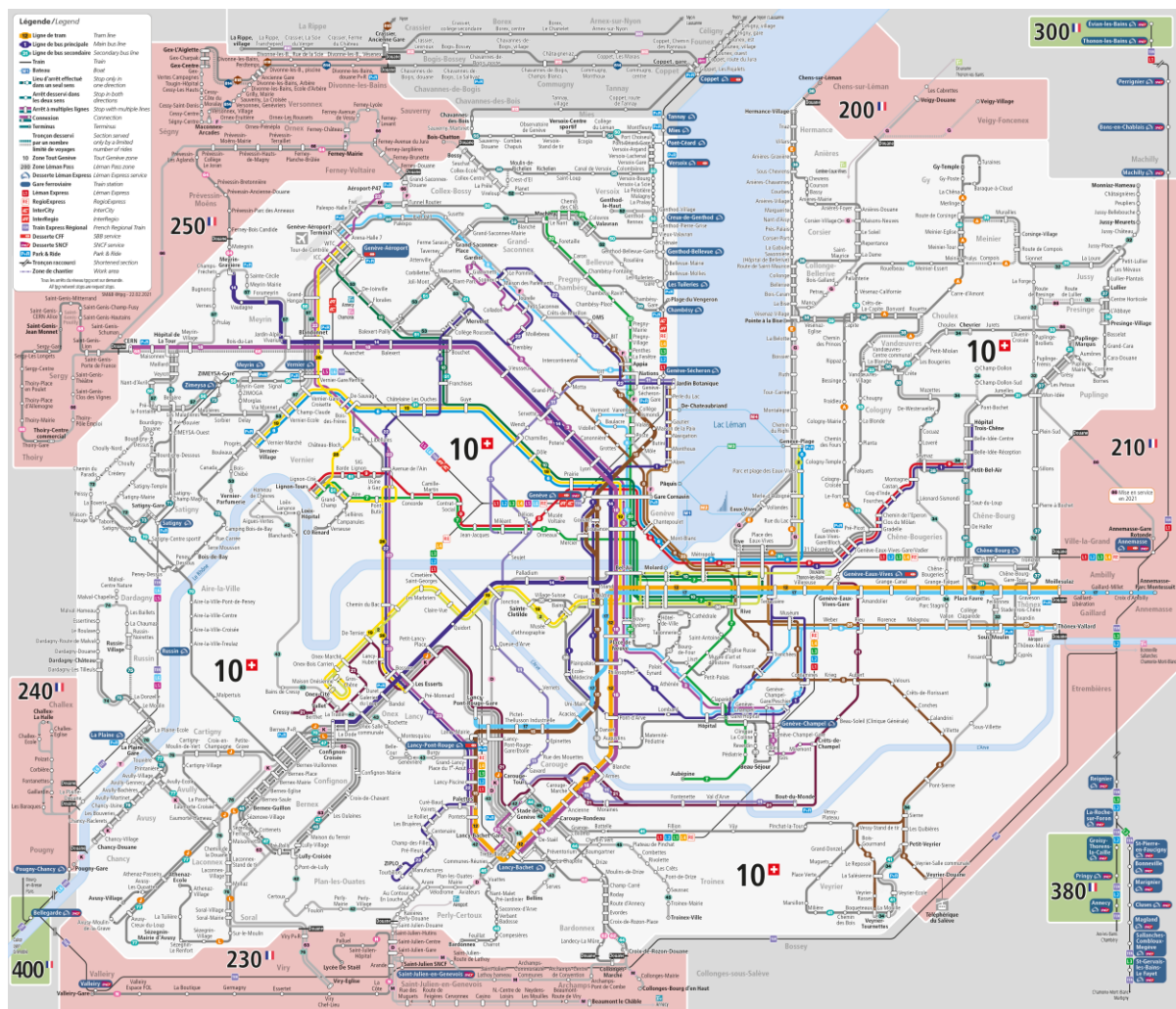
In the city and the Canton of Geneva, most local/regional public transport services are provided by Geneva Public Transports (Transports Publics Genevois, TPG). The extensive network of TPG-lines currently extends over 426.5 km and comprises¹⁴:

- 5 Geneva tramway lines, covering 33 km and 80 stops;
- 6 Geneva trolleybus lines, covering 30.4 km;
- 64 Geneva bus lines, covering 363.5 km (excluding school buses);
- 6 Aerobus lines for early hour transport to Geneva airport;
- 12 night bus lines (Noctambus).

In addition to dense coverage of the Geneva city centre, the TPG-network extends to all municipalities in the Canton of Geneva and across the border to some municipalities in France (see Figure 2.6).

¹⁴ Wikipedia (2021e)

Figure 2.6 Domestic and cross-border TPG-lines (2021)



Source: Transports Publics Genevois (2021a)

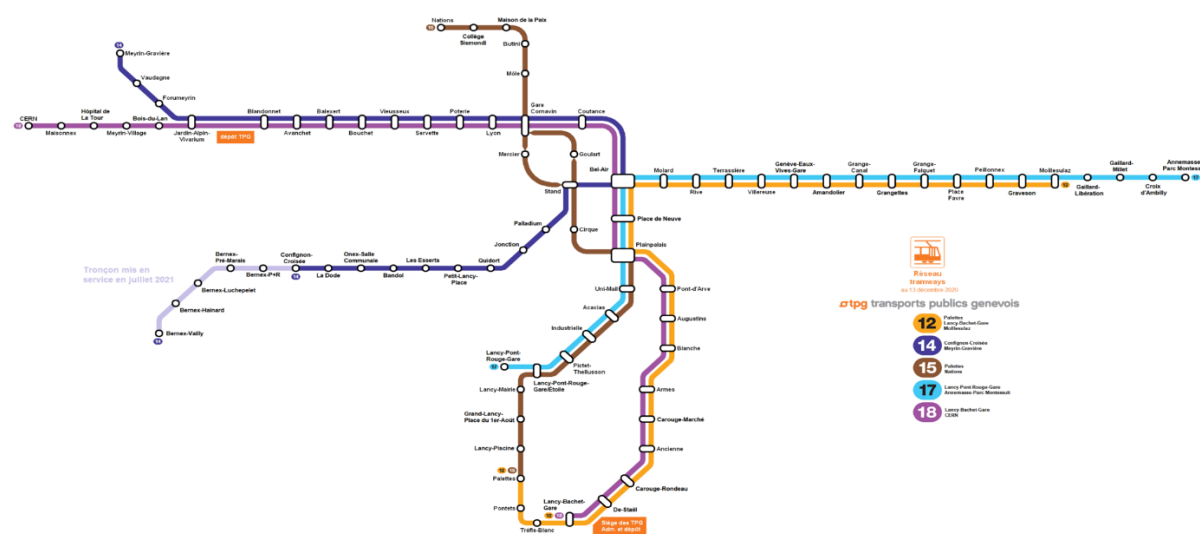
Cross-border bus lines are either directly operated by TPG (i.e. bus lines 62, G/G+, K) or subcontracted by TPG to other Swiss and French transport companies¹⁵. Since the start of the Léman Express at the end of 2019, many secondary bus lines were redesigned as feeders to the new train stations.

Since 1995, the Geneva tramway network has been greatly expanded in two phases (2003-2006, 2007-2011). The current network of 5 lines is the core of Geneva's public transport system (see Figure 2.7)¹⁶.

¹⁵ The following cross-border bus lines are operated either by other Swiss or French transport companies: lines 38, 52, 63, 64, 66, 68, 76, D, F, M, N, and T. See Wikipedia (2021f)

¹⁶ Wikipedia (2021g); Wikipedia (2021h); Wikipedia (2021i)

Figure 2.7 Geneva tramway network (December 2019)



Source: Wikipedia (2021h)

The tramway network is important to ensuring cohesion in the Canton, since it links the city of Geneva to its dense urban surroundings of large municipalities (e.g. Carouge, Lancy, Meyrin, Vernier, Onex or Bernex). Four cross-border extensions of the tram-network into French territory have been planned for a while (see Box below).

Today, however, only the extension of tramway line 17 'Geneva - Annemasse' is operational.

Planned or abandoned cross-border extensions of Geneva tramway lines:

- (1) The southern extension of line 15 from its current end point Palettes (CH) to Saint-Julien-en-Genevois (Département Haute-Savoie) will start in 2024.
- (2) The northern extension of line 15 from its current end point Nations (CH) to Ferney-Voltaire (Département Ain, arrondissement Gex) will start operating in 2026.
- (3) The planned north-western extension of line 18 towards Saint-Genis-Pouilly (Département Ain, arrondissement Gex) did not obtain Swiss federal co-financing under the 1st, 2nd and 3rd Agglomeration Projects and was officially abandoned by the French authorities on 21 September 2018. Instead, a 2 km long lane for a high level service bus between the terminus of line 18 and Saint-Genis-Pouilly is favoured, for which works started in 2020 and commissioning is planned for 2021.

Source: Wikipedia (2021j); Wikipedia (2021k)

Domestic and cross-border public transport in Annemasse Agglo

The Agglomeration Community Annemasse has its own public transport network, Annemasse Public Transports (Transports annemassiens collectifs, TAC). Since 2008, it has served the 12 municipalities of this inter-municipal cooperation structure. On weekdays, the TAC-network includes a Bus with a High Level of Service (BHLS)¹⁷ called TANGO and six regular bus lines (lines 3 to 8). On Sundays and public holidays, a regular bus line (ligne DA) and bus transport on demand (CHAL'Express) operate¹⁸.

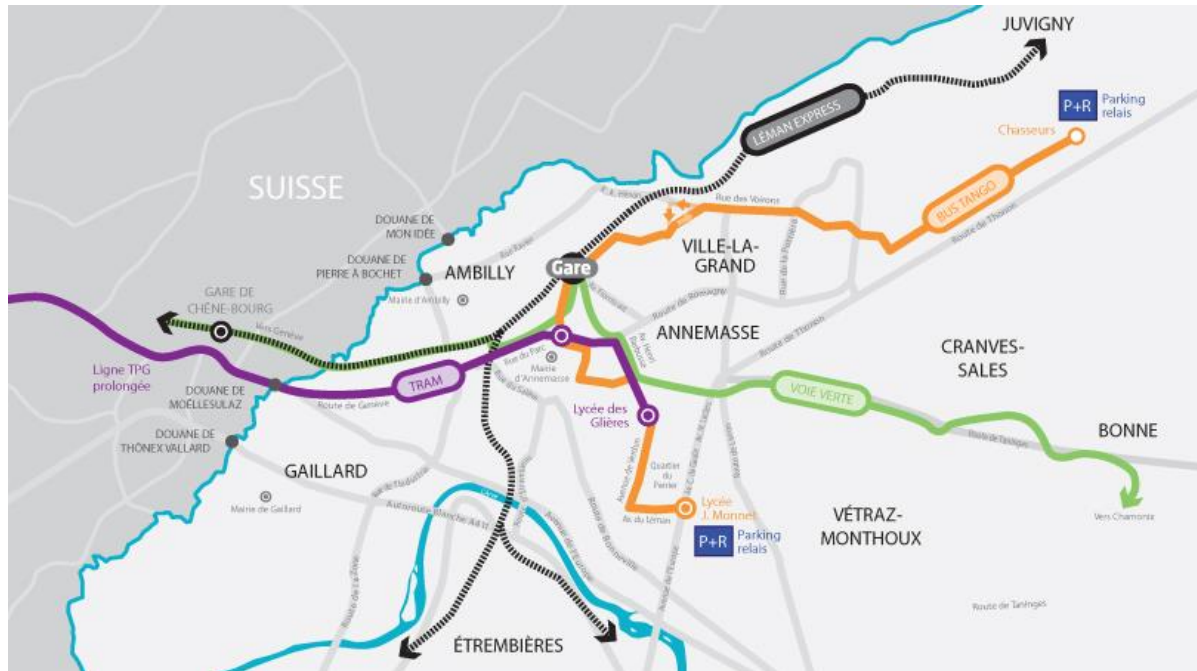
The current development of the TAC-network is strongly guided by the mobility strategy for the cross-border agglomeration Greater Geneva, with the CEVA part of the Léman Express and Geneva tramway line 17 between Lancy-Pont-Rouge and Annemasse

¹⁷ Transportation systems for 'Buses with a High Level of Service' (BHLS) came from the need to reduce congestion and pollution in bigger cities. BHLS operate at a high frequency on dedicated lanes for efficient and reliable passenger transport similar to a tramway or metro but at a reduced cost. This form of public transport is also called Bus Rapid Transit (BRT), Busway or Trambus.

¹⁸ Transports annemassiens collectifs (2021c); Wikipedia (2021m)

stations being the key reference elements. This is also reflected in the design of the mobility system for the Agglomeration Community Annemasse (see Figure 2.8).

Figure 2.8 Mobility system for the Agglomeration Community Annemasse



Source: Annemasse - Les Voirons Agglomération (2021)

The Agglomeration's mobility system considers cross-border tramway line 17 as one element supporting other domestic or cross-border modes of mobility, with each having a clearly defined function¹⁹:

- The CEVA part of the Léman Express establishes a link between Annemasse and Geneva Cornavin stations as well as links with other stations in Greater Geneva and even beyond. The Léman Express provides a cross-border centre-periphery service by-passing Geneva city centre and returning to Cornavin. This primarily targets people who need to go to destinations in the north of Geneva city centre (e.g. the airport) or the south of the Canton (e.g. to Plan les Ouates).
- Cross-border tram line 17 provides a complementary and proximity-based link between the city centres of Annemasse and Geneva since the tram line is characterised by a much finer grid of service than the CEVA. The distance between each tram-stop is about 350 to 400 metres, whereas it is about 1.5 or 2 kilometres between Léman Express train stations.
- The BHLS TANGO connects two Park & Ride facilities (Jean Monnet and Altéa) with the main residential and business areas in the centre of the Agglomeration Community. Connections are every 10 minutes during rush hour on weekdays. From the centre, people can continue their journey either across the border (i.e. tramway line 17, Léman Express) or within Annemasse Agglomeration with other TAC lines.
- The Green Route of Greater Geneva promotes cycling and walking from the French side to Geneva.

By complementing each other, these means of transport form a dense and efficient mobility network within the Agglomeration Community Annemasse that makes it easy for people to switch from one mode to another. For people living in the Agglomeration Community, this approach significantly improves domestic travelling conditions also to the cross-border surroundings.

¹⁹ Annemasse - Les Voirons Agglomération (2021); Transports annemassiens collectifs (2021c)

2.2. Demand for and benefits of the service

Cross-border tramway line 17 currently operates over 10.1 km, of which 8 km are on the Swiss side and 2.1 km on the French side. The starting point is Lancy-Pont-Rouge station close to Geneva city and the end is at Parc Montessuit in Annemasse city centre.

Tramway line 17 was eagerly awaited by many inhabitants in the cross-border urban area and finally started operating on 15 December 2019 (see Figure 2.9 below). At this date, the cross-border extension of the tramway line has completed its first development stage, while the second stage is still being implemented on the French side (see section 2.4 below).

Demand potential and target group of the service²⁰

The cross-border tramway is a service for the general public that aims at reducing traffic congestion and environmental pollution linked to individual car use for cross-border movements.

Today, around 35,000 vehicles cross the border every day at four border crossing points in the Agglomeration Community Annemasse (Pierre-à-Bochet, Moëllesulaz, Thônex-Vallard, Fossard). The demand potential and main target group are therefore French and Swiss inhabitants of the cross-border urban area who cross the border daily or frequently for different purposes (i.e. cross-border commuting to work or education, shopping, leisure etc.).

To capture the most French residents travelling to Geneva city centre, the tramway route was carefully designed to serve the most densely populated areas in the Agglomeration Community Annemasse and a number of key mobility hubs in that Community (i.e. Place Jean Deffaugt, with its shops and the intersection with the BHLS TANGO, Place de l'Etoile, Lycée des Glières in Annemasse, Croix d'Ambilly as well as Libération and Millet in Gaillard).

²⁰ Annemasse - Les Voirons Agglomération (2021); Interview with the transport office of the Canton of Geneva

Figure 2.9 Commissioning of cross-border tramway line 17



Source: bus-tram-geneve.ch (2021)

Although the Léman Express (CEVA) and cross-border tramway line 17 partially run in parallel, they do not provide the same service and are aimed at different users. The tramway offers a much more fine-meshed service with 25 stops on the current line, compared to only 3 for the Léman Express between Annemasse and Geneva station Eaux-Vives. A cross-border bus service was not considered an option due to the existing tram line 12 running to the Franco-Swiss border (Moëllesulaz). Also the tram has a greater passenger capacity, more comfort and a better carbon footprint, it runs on dedicated lanes and journey times are shorter than those of buses.

Current use of the tram service²¹

Already a short time after the start of operations, tramway line 17 has become a success.

In 2019, after only 15 days of operation, the tram services had 486,000 passengers. At the very beginning of 2020, with 624,056 passengers in the first three weeks of January, the new tramway line had become the 5th busiest line the entire network of Geneva Public Transports. On weekday mornings, line 17 is particularly busy in the Annemasse - Geneva direction. In the late afternoon and early evening, the opposite is true, when French cross-border workers and Swiss nationals living in France but working in the Canton of Geneva return home.

The most frequented stop on the new tramway line 17 is, unsurprisingly, the Bel Air interchange in Geneva, where all connections are made (80,924 boardings). Just behind comes the Parc Montessuit terminus in Annemasse with 69,797 boardings. The success of tramway line 17 is somewhat to the detriment of the parallel but Geneva-internal tramway line 12 (Moëlllesulaz - Geneva) that ends at the French border. This line has lost its leading position in terms of passengers transported within the Geneva public transport network, because cross-border workers have no longer to take the tram from the border but can start their trip on the French side.

Wider impact of the cross-border tram service²²

The tramway line 17 is already a well-accepted, sustainable and less polluting mode of transport that makes it easier for people on both sides to cross the border.

On the French side, between the current terminus and the Swiss border, the tram runs on a dedicated route with an average commercial speed of 17.3 km/h. This is faster than cars during peak hours. In addition to the Agglomération's BHLS TANGO and the Léman Express, tramway line 17 contributes to make traffic in the Agglomération Community Annemasse more fluid. There are 4,000 fewer vehicles on the roads each day, saving 7 million km of car journeys each year.

Moreover, tramway line 17 has a positive impact on urban development within the Agglomération Community Annemasse. While the platform supporting the light-rail-track on the Swiss side of line 17 is not grassed but tarred, the French side of the tramway platform is entirely grassed. The 1.5 hectares of grass and more than 230 trees planted make the Agglomération Community Annemasse greener. The tramway also helps reduce pollution on the French side (i.e. with 1,000 fewer tonnes of CO² emissions per year) and makes urban areas more pleasant (i.e. with redesigned public spaces along the line).

2.3. Governance

Since tramway line 17 is a public transport service operated on the Swiss and French sides, the legal and administrative provisions governing public transport in both countries apply. These help explain the specific cooperation arrangement established by both sides for constructing and operating the cross-border service that is described in section 2.4.

General governance framework in Switzerland and the Canton of Geneva

The operation of all regional and local and cross-border public transport services in the Canton of Geneva is primarily governed by cantonal laws, regulations and administrative procedures, but federal legislation for public transport and specific funding schemes also play an important role.

²¹ Tramway de Montpellier (2021); Wikipedia (2021i); Le Dauphiné (2020)

²² Annemasse - Les Voirons Agglomération (2021)

Federal laws of the Swiss Confederation are the Act on Railways of 1957²³, the Act on Passenger Transport of 2009²⁴ and the Act on Security Organs of Public Transport Companies of 2010²⁵. Of particular relevance is the Federal Act on Passenger Transport, since it sets out uniform procedures and modalities for granting passenger transport concessions, service ordering and service financing that apply to all modes of domestic and cross-border public transport. These specifications relate primarily to the 'direct transport with a development function' (i.e. long-distance, regional and local transport)²⁶, but also to passenger transport of minor importance.

In addition to granting federal subsidies for operating regional public passenger transport networks, the Swiss government also supports the financing of public transport infrastructure in agglomerations through the federal Fund for the national road network and agglomeration transport²⁷. A prerequisite for this is the existence of an agglomeration project, which guarantees coherence between transport, urbanisation, environment and landscape. Within that context, also the Greater Geneva agglomeration project is supported, and Swiss funding was granted for establishing the French-sided infrastructure for tramway line 17 (see Section 2.4 below).

At the level of the Republic and Canton of Geneva, the basic principles relating to public transport are set out in the Canton's constitution and other operational aspects are defined in specific cantonal laws (see Box below).

Constitutional and legal provisions on public transport in the Republic and Canton of Geneva:

(1) THE CONSTITUTION

The new Constitution of the Republic and Canton of Geneva (the 'State') came into force on 1 June 2013 and devotes section 8 to mobility. Article 190, in particular, defines the following principles: (1) The State shall develop a comprehensive mobility policy by coordinating planning, energy, environmental protection and traffic policies. (2) The State shall facilitate mobility by aiming at the complementarity, safety and fluidity of the various means of public and private transport. (3) The State shall guarantee individual freedom of choice of transport modes.

(2) THE LAW ON THE PUBLIC TRANSPORT NETWORK

The law on the public transport network of 17 March 1988 requires the elaboration of a multi-annual public transport action plan to determine the transport offer and harmonise services to increase the attractiveness and use of public transport. In addition to defining the procedure for determining the offer on the public transport network, this law also defines the mode of service contracting with the various public operators (Article 3): these are the Swiss Federal Railways (SBB / CFF / FFS), the Geneva Public Transports (TPG) and the company running boat services on the Lake Geneva (Société des Mouettes genevoises navigation, SMGN), but also any other transport operator whose services produce similar goals.

(3) THE LAW ON MOBILITY

The Law on Mobility of 23 September 2016 clarifies the Constitution of the Republic and Canton of Geneva with regard to the principle of coordinating mobility policy and other public policies (i.e. spatial planning, energy, environment protection and safety). This law also defines the structure of transport planning by prioritising the

²³ Fedlex (2021a)

²⁴ Fedlex (2021b)

²⁵ Fedlex (2021c)

²⁶ The responsibility for ordering and financing long-distance passenger transport services lies with the Swiss Confederation or the Cantons, depending on the type of service. Regional public transport is ordered and financed jointly by the Swiss Confederation and the Cantons, depending on the type of service. Local passenger transport is determined by the Cantons or municipalities, depending on the type of service.

²⁷ Nationalstrassen- und Agglomerationsverkehrsfonds (NAF), Fonds pour les routes nationales et le trafic d'agglomération (FORTA), Fondo per le strade nazionali e il traffico d'agglomerato (FOSTRA)

various cantonal and cross-border planning documents that are of relevance in this respect.

(4) THE LAW ON COHERENT AND BALANCED MOBILITY

In September 2014, the former Cantonal Department of the Environment, Transport and Agriculture (DETA) launched a broad consultation on mobility among the inhabitants of Geneva. With the consultation results summarised in a draft law for coherent and balanced mobility that was submitted to a cantonal popular vote on 5 June 2016, this text was supported by nearly 68% of the population. The new law addresses the needs of all modes of transport and defines operating procedures aimed at improving travel conditions and making transport networks more fluid. In its general provisions, it determines the multimodal infrastructure and transport services that form the basis of the mobility policy, and then deals with parking management from the point of view of usage. It also defines the implementation of the constitutional principle of complementarity and individual freedom of choice of transport modes. The latter is done by organising the Canton into zones, within which priority is given to soft modes and public transport, and into structural networks.

Source: République et Canton de Genève (2019), pp. 15 -17

In the Canton of Geneva, the role of transport organising authority is ensured by the cantonal transport office (Office Cantonal des Transports) which is part of the infrastructure department in the Canton's administration. The cantonal transport office plans and determines the public transport offer for the Canton-internal network. The office is also responsible for ordering public transport services on the territory of the Canton of Geneva, which is either done alone (e.g. domestic bus and tram services) or in cooperation with the Federal Office of Transport (OFT). Cross-border public transport services are ordered either jointly with other transport organising authorities in France, or through a specifically established cross-border structure (i.e. GLCT Public Transport) of which the Canton is a member²⁸.

Planning and ordering activities of the cantonal public transport office are carried out in accordance with the Canton's general constitutional principles on public transport and other provisions in cantonal laws. Public transport planning and ordering is currently implemented through two instruments:

- The long-term multimodal strategy of the Canton of Geneva, which was adopted in May 2013 (Mobilités 2030 - stratégie multimodale pour Genève). This includes guidelines for the development of public transport, the road network, soft mobility, parking space and other aspects of mobility. It is aligned with the Cantonal Master Plan on spatial planning (Plan directeur cantonal) and the cross-border Agglomeration Projects for Greater Geneva. The strategy is implemented in stages, through the periodic elaboration of a medium-term multimodal master plan (Plan directeur multimodal) and different sectoral action plans (Plans d'actions sectoriels)²⁹.
- The Public Transport Action Plan (Plan d'actions des transports collectifs, PATC) is one of the operational tools for implementing the long-term policy vision of the multimodal strategy Mobilités 2030. The Action Plan is drawn up by the cantonal transport office for a 5-year period, which is currently the 5th Public Transport Action Plan 2020-2024³⁰.

The Public Transport Action Plan is also a reference for the service provision contract (contrat de prestations) the Canton concludes with each transport operator carrying out public passenger transport services within the Canton or across the border with France³¹.

²⁸ Interview with the transport office of the Canton of Geneva

²⁹ République et Canton de Genève (2013), p.11

³⁰ République et Canton de Genève (2019)

³¹ Transports Publics Genevois (2021b)

General governance framework in France and Annemasse Agglo

In France, the regulatory framework for domestic public passenger transport has recently undergone major changes and is today based on several national laws:

- The most important is the Code of Transport (Code des transports)³² of October 2010, which was established on grounds of a law that granted the Government an authorisation to publish this code by ordinance in application of Article 38 of the French Constitution. The Code of Transport replaces many provisions in existing codes and laws on aspects of transport as well as multiple legislative texts relating to public passenger transport, in particular the law on the orientation of internal transport (LOTI) of 30 December 1982. The legislative part of the Code of Transport has more than 2,200 articles, distributed in a common part and five parts devoted to the main transport sectors. The second 'book' of the common part also sets out the basic competences of public actors at different territorial levels and the modalities for planning, organising and ordering public passenger transport services.
- Two more recent national laws not directly related to transport include provisions on the roles of territorial authorities in public passenger transport that modified the Code of Transport: the law on the modernisation of territorial public action and the affirmation of metropolises of 2014 (law MAPTAM)³³ and the law on the new organisation of the territory of the Republic of 2015 (law NOTRe)³⁴.
- In December 2019, the orientation law on mobility (LOM) was adopted and also modified parts of the Code of Transport. LOM has three pillars including provisions that are relevant for public transport: (1) Investing in better everyday transport, (2) facilitating and encouraging new solutions enabling everyone's mobility and (3) moving to cleaner mobility³⁵.

On grounds of this changed legal framework, public passenger transport services by train, bus, tram, ferry or other modes are today provided at two basic levels: at the central level by the State and at the decentralised level by different public authorities. The latter include constitutional territorial authorities (regions, departments and municipalities) as well as public establishments for inter-municipal cooperation. Public actors at both levels are generally acting as transport organising authorities (autorité organisatrice de transport, AOT), but decentralised public authorities are from July 2021 on acting on their respective territories as mobility organising authorities (autorité organisatrice de la mobilité, AOM). This new form of authority was introduced by the MAPTAM law of 2014 and is further specified in the Code of Transport (see Box below).

Roles in the organisation and provision of public passenger transport in France

The State acts as transport organising authority for terrestrial public passenger transport of national interest, which is mostly ensured by country-wide railway passenger transport services. These are provided by three companies forming part of the French National Railways Company Group (Société nationale des chemins de fer, Groupe SNCF): the railway passenger transport company SNCF Voyageurs, the national railway network managing company SNCF Réseau and SNCF Gares & Connexions that runs and promotes railway stations. This new structure applies from 1 January 2020 and emerged from the French New Railway Pact of June 2018. This pact called for a unified, publicly owned rail transport and mobility group, bringing the three former state-owned public industrial and commercial establishments (EPICs) together under one roof: these are SNCF, SNCF Mobilités and SNCF Réseau (as well as their subsidiaries).

The constitutional territorial authorities and public establishments for inter-municipal cooperation act within their territorial jurisdiction as mobility organising authorities (AOM). In that function, they are competent for organising a range of urban and

³² Légifrance (2021a)

³³ Légifrance (2021b)

³⁴ Légifrance (2021c)

³⁵ Légifrance (2021d); Ministère de la Transition Écologique (2021a)

non-urban public transport services: (1) regular public transport, (2) on-demand public transport, (3) school transport, (4) services for active mobility or contributing to the development of such mobility, (5) services for the shared use of motorised land vehicles and (6) solidarity-based mobility services improving access to mobility for economic or socially vulnerable people and people with disabilities or reduced mobility.

In relation to these competences, the Code of Transport defines the following general distribution of roles (esp. Articles L1215-1, L1231-1 to L1231-5, L2121-3):

- The region is the leading authority responsible for planning and organising intermodality and ensuring complementarity between the modes of transport on its territory, but also for establishing arrangements on joint action with other mobility organising authorities. The region is the mobility organising authority for transport services of regional interest, including rail passenger transport services of regional interest. The latter covers both regional express trains (TER) and some trains for territorial balance (TET).
- Municipalities and their different public establishments for inter-municipal cooperation (i.e. inter-municipal syndicate, community of municipalities, agglomeration community, urban community, metropolis) can become a mobility organising authority. In that case, they ensure the planning, monitoring and evaluation of their mobility policy and involve all relevant local actors in the organisation of mobility. In addition to the six mobility services defined for AOM (see above), they can also offer individual mobility advice and support services for disadvantaged groups as well as for employers and managers of activities generating significant travel flows.

Departments are only responsible for school transport for disabled pupils (since 1 September 2017) and retain a role in the development of departmental roads (i.e. bus stops, bicycle paths, etc.).

The constitutional territorial authorities and public establishments for inter-municipal cooperation have in most cases entrusted operation of their public transport networks to private companies by contracts of public service delegation.

Source: SNCF (2021); Légifrance (2021a); Ministère de la Transition Écologique (2021b)

Based on this legal framework, Agglomeration Community Annemasse is acting today as a mobility organising authority within the meaning of the Code of Transport (i.e. Articles L1231-1 to L1231-5). It is also responsible for school transport, the organisation of non-urban transport and the preparation of urban travel plans³⁶.

Agglomeration Community Annemasse operates its public transport network TAC on the basis of contracts of public service delegation, for which regular competitive tendering procedures are organised. Since 2002, the TAC network has been operated by the company Public Transports Annemasse Agglomeration (Transports publics de l'agglomération d'Annemasse, TP2A). This is a joint venture between the Paris Public Transports Company (RATP) and Geneva Public Transports (TPG), with the latter holding 49% of the shares of TP2A via its subsidiary TPG France. Further competitive tendering took place in 2008 and 2015, both of which were won by TP2A³⁷. The current contract with TP2A runs from 1 January 2016 to 31 December 2022³⁸.

Since public passenger transport in the TAC-system is based on bus services, tramway line 17 holds a specific position and does not form part of the above-mentioned contracts. Agglomeration Community Annemasse is therefore separately planning the French part of the tramway's passenger transport offer and also orders services directly from the tramway operator Geneva Public Transports (see Section 2.4 below)³⁹.

³⁶ DGCL (2021)

³⁷ Wikipedia (2021a); Wikipedia (2021m)

³⁸ Due to the COVID-19 crisis, the initial final date of the contract (31 December 2021) was extended by one year to allow for a new tender under good conditions.

³⁹ Interview with the transport office of the Canton of Geneva

Governance of the service provider TPG

The cross-border passenger transport service on line 17 is based on a unilateral management and service delivery model. This means that all management structures are located on the Swiss side, and these are in charge of providing the cross-border transportation service within Agglomeration Community Annemasse on a day-to-day basis.

The sole operator of tramway line 17 is Geneva Public Transports (TPG), which is owned 100% by the Canton of Geneva and is an autonomous establishment under cantonal public law (*établissement autonome de droit public cantonal*). TPG also operates the other Geneva tramway network lines, for which it holds an operating license until December 2036 under the Federal Act on Passenger Transport of 2009⁴⁰. TPG is very experienced in providing cross-border passenger transport services to other destinations on the French side, mainly bus services for the time being (see section 2.3 above). Its headquarters are in Geneva at the TPG vehicle storage facility of Bachet-de-Pesay.

The mission of TPG is to contribute to the management of mobility in the Canton of Geneva, by proposing a quality sustainable transport offer. This mission of TPG as well as the principles and performance criteria for passenger transport are further specified in 5-year service contracts that TPG concludes with Canton of Geneva (see Box below)⁴¹.

Service provision contracts concluded between TPG and Canton of Geneva

The 5-year service provision contracts cover all public passenger transport services TPG operates within the Canton of Geneva and some cross-border bus services with only one stop in France⁴². The contract sets objectives for transport services and specifies the timetable for implementation. It also establishes the overall financial framework for these services and sets the financial contributions granted by the Canton of Geneva. To increase accountability, a system of financial sanctions is foreseen for some decisive contract objectives that are monitored by one or more performance indicators. To ensure services are carried out correctly, the Canton checks at regular intervals if the performance indicators have improved (i.e. transport offer; level of use of public transport, quality of customer service, etc.), if environmental impacts have been reduced and that there is financial control.

The year 2019 marked not only a paradigm shift for mobility in Greater Geneva cross-border agglomeration, but also a crucial turning point in the contract for TPG:

- On the one hand, the TPG service contract for 2015-2018 terminated but was extended for another year to cover the transition until launch of the Léman Express at the end of 2019. For this decisive year of contract prolongation, the financial sanctions had not to be activated since all targets of indicators subject to penalties could be reached.
- On the other hand, the new contracting period started in 2019 with validation of the new service contract for 2020-2024. This contract pursues the objectives of the new Public Transport Action Plan of the Canton of Geneva that covers the same period.

During 2020-2024, TPG will take ambitious action to develop the public transport offer for providing continuous support to Léman Express. This includes new public transport lines and a stronger development of TPG's urban offer by increasing the capacity and attractiveness of the tramway network.

Source: Transports Publics Genevois (2021b); Transports Publics Genevois (2020a), pp. 6, 36, 37

⁴⁰ Wikipedia (2021e); Annemasse Agglomération / Etat de Genève (2019), pp. 3, 4

⁴¹ Transports Publics Genevois (2021b)

⁴² Other cross-border bus lines, mainly lines D, F, 66 and 68, are contracted under a public service delegation awarded by the cross-border body GLCT for cross-border public transport (GLCT pour les transports publics transfrontaliers). Interview with the transport office of the Canton of Geneva.

Objectives and conditions in TPG's new service contract for 2020-2024 also apply to public passenger transport on cross-border tramway line 17, though only on the Swiss part.

It is interesting to note that the regulatory provisions for passenger transport of TPG (Dispositions réglementaires pour le transport de voyageurs, de bagages et d'animaux sur le réseau des Transports publics genevois, DRT-tpg) also apply on the French side of tramway line 17. This is specified by Article 3 (3), which states that for tram sections operated on French territory the DRT-tpg are in principle fully applicable⁴³.

Trams running on the entire line 17 are operated by TPG staff only. These are employed under Swiss labour law and in accordance with the rules on working days in foreign territory defined in the double taxation agreement between France and Switzerland⁴⁴.

Cross-border tariff integration⁴⁵

Cross-border tramway line 17 is fully integrated into a two-tier tariff system that started in Greater Geneva in December 2019.

Already 20 years ago, in July 2001, three public transport operators⁴⁶ established a transport association covering the Canton of Geneva (Unireso). Unireso introduced an integrated tariff allowing travellers to use buses, trolleybuses, trams, trains and boat shuttles on Lake Geneva with a single ticket. Between 2004 and 2006, other public transport operators from the neighbouring Swiss Canton of Vaud and the French departments of Ain and Haute-Savoie became members of Unireso. Annemasse Public Transports (TAC) joined Unireso as early as 2004. At the end of this enlargement process, Unireso became a cross-border transport association with a tariff area comprising a so-called 'all Geneva zone' and various 'regional zones'.

With the start of the Léman Express in December 2019 and the strengthening of cross-border railway passenger transport within Greater Geneva, however, there was a complete overhaul of the existing tariff system. As a result of this, the former Unireso zone-system was abandoned and Unireso transport association was split into two separate transport associations. These two transport associations are now managed by the company Transport Associations Management Ltd (Gestion communautés tarifaires SARL, GCT), which was created in 2019. Aside from managing both associations, GCT draws up traffic accounts and is responsible for distributing and accounting fare revenues.

From December 2019, the new two-tier system in Greater Geneva establishes tariff integration within the Canton of Geneva through Unireso and cross-border tariff integration through the Léman Pass (see Figure 2.10 below).

⁴³ Transports Publics Genevois (2020b), p. 4

⁴⁴ Interview with the transport office of the Canton of Geneva

⁴⁵ Unireso (2021a); Unireso (2021b); Léman Pass (2021); Wikipedia (2021n); Interview with the transport office of the Canton of Geneva; Wikipedia (2021e); Wikipedia (2021f)

⁴⁶ Geneva Public Transports (TPG), the Swiss Federal Railways (SBB / CFF / FFS) and the company running boat services on the Lake Geneva (Société des Mouettes genevoises navigation, SMGN).

journey (origin-destination) is subject to a specific fare, which is calculated according to the departure station or urban areas selected and kilometres travelled.

With the entry into force of this two-tier system in December 2019, also the cross-border tramway line 17 operates in two tariff zones. The Swiss section of the line belongs to Unireso zone 10, while the French section belongs to Léman Pass zone 210 that corresponds to the area covered by the TAC public transport network in Agglomeration Community Annemasse.

2.4. Operational provisions

Until the 1950s, Geneva's tramway ran to the neighbouring French city of Annemasse. Due to the decommissioning programme implemented in Geneva during the following decades, the Geneva tram network shrank to a single but heavily used line that stopped at the Franco-Swiss border (tramway line 12). On 14 October 2019, nearly 60 years later, the tram on Geneva-Annemasse line 17 again crossed the French border at the Moëllésulaz customs station for its first trial run on light-rails. Two months later, on 15 December 2019, the cross-border tram service was officially commissioned⁵¹.

The provisions for establishing, operating and financing the new cross-border passenger transportation service on tramway line 17 are laid down in three sources⁵²:

- A cross-border cooperation agreement concluded in 2019 between the Canton of Geneva and Annemasse Agglo⁵³, which defines the overall framework for the passenger transportation service on tramway line 17 (see Box below).
- A public service provision contract concluded between TPG and the Canton of Geneva for the Swiss part of the tramway service.
- A negotiated contract of public service delegation concluded between TPG and Annemasse Agglo for the French part of the tramway service, which was co-signed by the cantonal administrative department on infrastructure but without making the Canton a contracting party.

Cross-border cooperation agreement on tramway line 17:

On 6 November 2019, the Canton of Geneva and Agglomeration Community Annemasse signed the Cross-border Cooperation Agreement on tramway line 17 to formalise their collaboration. The agreement is a specific instrument provided for by Article 3 of the multilateral Karlsruhe interstate agreement on cross-border cooperation concluded between Germany, the Grand Duchy of Luxembourg, France and Switzerland.

The Cross-border Cooperation Agreement on tramway line 17 defines the subject matter and other basic elements governing cooperation (Articles 1-4, 6, 7), aspects relating to the ownership of light-rail infrastructure, buildings and rolling stock (Article 5), aspects relating to service commissioning, the transport offer and the principles of operation and maintenance (Articles 8-10) as well as matters relating to tariffs, service financing and the applicable fiscal regime (Articles 11-15).

Source: Annemasse Agglomération / Etat de Genève (2019)

Article 4 of the cross-border cooperation agreement stipulates that the entire cross-border passenger transportation service on tramway line 17 is governed by the principle of territoriality. This means that each transport organising authority is fully responsible for conceptualisation, planning, organisation, financing and operation of the service on its territory until the state border.

However, each side recognises the territorial powers of the other side and commits to fully exercise its own competences in a spirit of mutual coordination and cooperation. To ensure this, a cross-border 'Political Steering Committee' (Comité de pilotage politique) was established as a joint body that has neither legal personality nor

⁵¹ Urban Transport Magazine (2019); Le Messenger (2019); Tribune de Genève (2017)

⁵² Interview with the transport office of the Canton of Geneva

⁵³ Annemasse Agglomération / Etat de Genève (2019)

budgetary autonomy. Nevertheless, this Committee plays an important role in the ongoing operation of tramway line 17 since it:

- defines the joint offer of tramway line 17,
- determines, if necessary, changes to expenditure and revenue to determine the public funding contributions,
- deals with all aspects to ensure the good performance of line 17 and defines a joint action plan with responsibilities of the respective authorities to increase the efficiency of the line,
- proposes the financing contributions to the competent bodies.

The Committee meets at least once a year and remains in place for the duration of the cross-border cooperation agreement.

Establishment of the light-rail track infrastructure in France⁵⁴

French infrastructure works for the cross-border extension of tramway line 17 'Geneva - Annemasse' have two phases. The first was completed with commissioning of the tramway service on 15 December 2019 and the starting operation between the Franco-Swiss border (Moëllesulaz customs) and the current end point at Parc Montessuit - Villa du Parc in Annemasse city (see Figure 2.11).

Figure 2.11 Tramway line 17 in France (phases 1 and 2)



Source: Annemasse - Les Voirons Agglomération (2021)

On the 1.7 km completed tramway line, people can travel on the French side between four stops in the municipalities of Gaillard, Ambilly and Annemasse or continue their journey to Geneva city centre.

For the infrastructure works of tramway line 17 (phase 1) and the planned extension (phase 2), Agglomération Community Annemasse is the contracting authority. The Agglomération has transferred part of its overall mission to a delegated contracting authority, the consortium Teractem / Territoires 38. Together, they are managing issues related to land property and contracts with various sub-contractors. The company Ingerop was commissioned to carry out operational planning coordination. This role is primarily aimed at ensuring the smooth running of on-site works and anticipating any overlapping activities of companies working on the tram line.

After the completion of phase 2, the tramway will serve seven stops on a 3.3 km route to the future end point at Lycée des Glières. For the moment, elected representatives on the French side are completing the financing plan for works during the second phase.

⁵⁴ Annemasse - Les Voirons Agglomération (2021)

The establishment of light-rail tracks and other infrastructure works are expected to start in 2023 and the extended tramline should enter into service at the end of 2025.

Cross-border financing of infrastructure works in France⁵⁵

The overall cost of infrastructure works on French territory for the cross-border extension of tramway line 17 is estimated at EUR 89 million (phases 1 and 2).

Since cross-border passenger transport by tramway line 17 is important for the economic development of Greater Geneva, financing was adapted so Agglomeration Community Annemasse did not invest alone in a tramway service of common interest for both sides.

EUR 57 million for infrastructure works on the phase 1 (line segment from Moëllesulaz customs to Parc Montessuit- Villa du Parc) was financed by (see Figure 2.12):

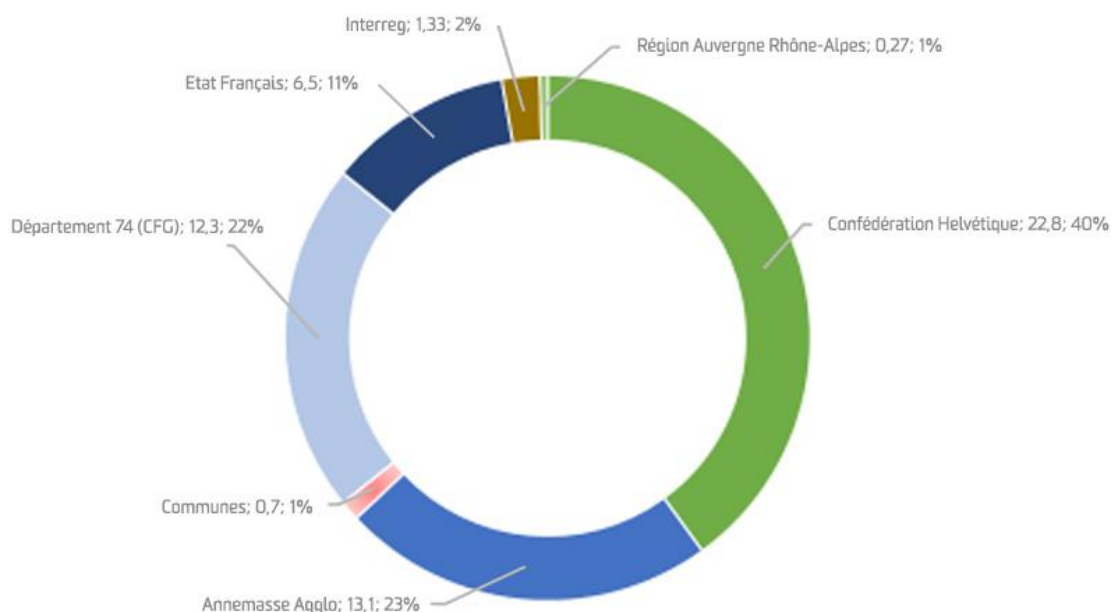
- national governments in France and Switzerland;
- the concerned French region and department;
- Agglomeration Community Annemasse and other local authorities;
- the European Union (via Interreg).

An interesting detail is that the Swiss Confederation co-financed 40% of the infrastructure works on French territory via the federal Fund for the national road network and agglomeration transport infrastructure. In Switzerland, this fund also finances projects of agglomeration interest regardless of their location.

During this first phase, however, problems in putting together the financial package delayed commissioning of the cross-border tram service (see Chapter 3).

In the second phase, an estimated EUR 32 million are dedicated to works to extend the line from Parc Montessuit to Lycée des Glières in Annemasse.

Figure 2.12 Financial contributions for phase 1



Source: Annemasse - Les Voirons Agglomération (2021)

Ownership and use of tramway infrastructure⁵⁶

On the Swiss side, all ground infrastructure and aerial electrical tramway infrastructure (i.e. catenaries) belong to the Canton of Geneva, while TPG owns the related buildings and equipment. For the use of light-rail tracks, TPG has to pay charges to the Canton

⁵⁵ Annemasse - Les Voirons Agglomération (2021)

⁵⁶ Interview with the transport office of the Canton of Geneva; Annemasse Agglomération / Etat de Genève (2019), pp. 8, 9

of Geneva. This also applies to the use of Geneva-side tracks of the tramway line 17 up to the French border.

On the French side, all tramway line 17 ground and aerial electrical infrastructure as well as buildings and equipment for the tramway are for the moment owned by Annemasse Agglo. Once all infrastructure works on the French side are terminated at the end of phase 2 there will be a mutually agreed division of ownership of ground and aerial infrastructure. This division will be based on a joint expert assessment that will be recorded in writing. Since track access charges do not exist in France for light-rail tracks, Annemasse Agglo provides the use of its tracks free of charge to TPG.

Maintenance of tramway infrastructure

The maintenance of tramway infrastructure is carried out separately on the Swiss and French sides.

On the Swiss side, tramway light-rail tracks for all lines as well as other ancillary infrastructure are maintained by Geneva Public Transports. TPG uses various tools and vehicles such as grinders for the rails, cleaning trucks and bucket trucks for the overhead contact lines⁵⁷.

On the French side, tramway infrastructure in the three municipalities crossed by tramway line 17 (i.e. Gaillard, Ambilly and Annemasse) is maintained by Agglomeration Community Annemasse. This is done through external service contracts, mainly for cost efficiency and practicability. Some maintenance is outsourced to service providers in France (e.g. maintenance of turf on the tram support infrastructure) while for more technical works TPG is contracted. The latter mainly concerns maintenance of the technical-electrical infrastructure (e.g. signalling systems) as well as special road-rail vehicles in case of any breakdown. This choice is logical since purchasing such specialised equipment would be far too expensive for Annemasse Agglo⁵⁸.

Safety of operations and maintenance of rolling stock

Before starting commercial operation of cross-border tramway line 17, all trial runs had to get approval from the state authorities in France (Prefecture) and Switzerland (i.e. Federal Railway Office). Moreover, a safety record on all French-side elements of the service had to be established by Agglomeration Community Annemasse and TPG in accordance with French legislation (i.e. on light-rail infrastructure; TPG rolling stock operating in Annemasse Agglo). During the ongoing operation of the tramway, security on the French side is checked by Agglomeration Community Annemasse as well as by external control bodies⁵⁹.

TPG has three large transport vehicle storage facilities (dépôts) in the Canton of Geneva (La Jonction, Bachet-de-Pesay and En Chardon). Minor maintenance of rolling stock for all five tramway lines is carried out at the Bachet-de-Pesay facility.

Provision of passenger transport service on tramway line 17

The public service obligations for the provision of cross-border passenger transport on tramway line 17 are laid down in two contracts:

- The public service provision contract between TPG and the Canton of Geneva for the Swiss part of the service.
- The negotiated contract of public service delegation between TPG and Annemasse Agglo for the French part of the service.

In accordance with the cross-border cooperation agreement of 2019, both transport organising authorities have avoided inconsistencies or contradictions between their contracts with TPG and also pursue the same service objectives. Moreover, the Canton of Geneva and Annemasse Agglo have jointly defined a 'reference service offer' for tramway line 17. Finally, both transport organising authorities also consulted each other

⁵⁷ Wikipedia (2021h); Le Messenger (2019)

⁵⁸ Interview with the transport office of the Canton of Geneva

⁵⁹ Interview with the transport office of the Canton of Geneva; Annemasse Agglomération / Etat de Genève (2019), pp. 8, 12

on quality indicators for passenger transport services to be defined in the contracts with TPG⁶⁰.

For the Canton of Geneva, general objectives and conditions for the passenger transport service on tramway line 17 derive from the new overall service provision contract Canton of Geneva concluded with TPG for 2020-2024 (see Section 2.3 above)⁶¹. However, Canton of Geneva suggested that TPG provides a passenger transport service on the entire cross-border tramway line 17 that corresponds to the higher Swiss and Geneva quality standards (especially regarding service frequency on weekends and during the night) for which it will unilaterally cover the extra cost⁶².

Tramway line 17 has operated for more than 18 months and the 2019 and 2020 annual reports of TPG show encouraging results.

During the first two weeks of operation in December 2019, tramway line 17 carried 486,000 passengers on the entire route between Lancy-Pont-Rouge-Gare and Annemasse-Parc Montessuit⁶³. This positive development came to a halt in March 2020, when French and Swiss authorities adopted COVID-19 measures (i.e. semi-confinement, closure of schools and non-essential places, etc.) which led to a drastic drop in the number of passengers using public transport⁶⁴. Despite the difficult context throughout 2020, passenger volume was still substantial as cross-border tramway line 17 carried 8.14 million passengers⁶⁵.

Financing of tramway line 17

The cross-border cooperation agreement between Canton of Geneva and Annemasse Agglo defines in detail the overall regime for financing tramway line 17. This includes provisions on sharing the operating deficit.

The income side is calculated globally for the entire line 17 and determined by four main components⁶⁶:

- Income from the sale of all tickets (vente de tous les titres de transport) results from a complex process of revenue sharing within the two transport associations Unireso and Léman Pass (see: Section 2.3 above).
- Other income (autres produits) includes financial incomes and miscellaneous revenues (e.g. fines for users without tickets).
- Tariff compensations from Canton of Geneva (indemnités tarifaires du Canton de Genève) are also considered as fare income. This compensates cost for higher quality passenger transport services decided and demanded by the Canton of Geneva (e.g. age group benefitting from fare reductions etc.), which are above the mandatory Swiss-wide service quality standards set out by the Federal Act on Passenger Transport of 2009⁶⁷.
- Servicing revenues (recettes de desserte) are in-advance fixed public financial contributions (subsidies) from Canton of Geneva and Agglomeration Community Annemasse that cover the surplus of the tramway's operating and maintenance costs.

For determining the amount of financial contributions to be mobilised by Agglomeration Community Annemasse and Canton of Geneva, the cross-border cooperation agreement sets out transitory provisions that are applied during the first two years of commercial operation of the tramway line 17 (Article 12-2). Contributions are determined in relation to the jointly agreed reference service offer, on grounds of which the TPG established a provisional operations budget in the two public service contracts. The actual amount of

⁶⁰ Annemasse Agglomération / Etat de Genève (2019), p. 14

⁶¹ Transports Publics Genevois (2020a), pp. 6, 36

⁶² Interview with the transport office of the Canton of Geneva

⁶³ Transports Publics Genevois (2020a), p. 46

⁶⁴ Transports Publics Genevois (2021c), p. 4

⁶⁵ Transports Publics Genevois (2021c), p. 42

⁶⁶ Transports Publics Genevois (2020a); Transports Publics Genevois (2021c); Interview with the transport office of the Canton of Geneva

⁶⁷ Interview with the transport office of the Canton of Geneva

public contribution is then calculated by taking into consideration two weighting criteria: two thirds of the amount is calculated on the basis of the tram's driving time and one third on the basis of the distance travelled by the tram. After the second year this provisional regime is reviewed (Article 13) and a new system for revenue sharing will be adopted after the third year of operation (Article 14)⁶⁸.

Distribution of the operational deficit for tramway line 17 is based on model calculations made in the cross-border cooperation agreement. They considered the cost of operation without administrative and structural expenses in the Canton of Geneva and assumed cost coverage of 50%. By taking into account different volumes of service kilometres and applying the two thirds / one third weighting for public contributions, the following share ranges were calculated: for the Agglomeration Community Annemasse from 16.6% to 18.5% and for the Canton of Geneva from 81.5% to 83.4%⁶⁹.

However, Canton of Geneva has unilaterally committed to cover the deficit of operations in the first two years since passenger volumes and fare revenues could differ from its initial projections. This relates in particular to the Corona-deficit that occurred at the end of 2020⁷⁰.

Bearing in mind the challenging context in 2019 and 2020, the last two annual reports of TPG show encouraging results for cross-border tramway line 17 (See Box below).

Financial performance of the cross-border tramway line 17 in 2019 and 2020:

Financial figures for the last two weeks in 2019:

- The total cost of operation during December was CHF 726,637.
- Transport income^(*) was CHF 328,056 and other income^(**) CHF 20,717.
- Public contribution from the Canton of Geneva (excluding the tariff compensation of the Canton) was CHF 365,810. No contributions came from Annemasse Agglo in 2019 mainly due to the different accounting years on the French and Swiss sides, so contributions for December 2019 were booked in 2020.
- After deducting transport and other income and the Canton of Geneva public contribution from the total cost, the final loss was CHF 12,054.
- Cost coverage^(***) was 48% which is good for only 2 weeks of operation, considering that cost coverage for the other four tramway lines (12, 14, 15 and 18) with a full year of operation varied between 55.2% and 61.8%.

Financial figures for the entire year 2020:

- Total cost of operation was CHF 18,157,190.
- Transport income^(*) was CHF 6,787,789 and other income^(**) CHF 334,999.
- Public contributions from the Canton of Geneva (excluding the tariff compensation of the Canton) was CHF 7,582,272 and from Annemasse Agglo CHF 2,210,915.
- After deducting transport and other income and public contributions of the Canton of Geneva and Annemasse Agglo from the total cost, there was a loss of CHF 1,241,215.
- Cost coverage^(***) was 39.2% in a year marked by the COVID-19 pandemic, with cost coverage of the other four tramway lines (12, 14, 15 and 18) ranging between 38% and 49.9%.

(*) Transport income (produits du transport) = tariff revenue (i.e. sale of all tickets + tariff compensation from the Canton of Geneva).

(**) Other income (autres produits) = financial income plus miscellaneous income

⁶⁸ Annemasse Agglomération / Etat de Genève (2019), pp. 15-18

⁶⁹ Annemasse Agglomération / Etat de Genève (2019), p. 26

⁷⁰ Interview with the transport office of the Canton of Geneva

(***) Cost coverage (taux de couverture des charges) = tariff revenue (i.e. sale of all tickets + tariff compensation from the Canton of Geneva) plus financial income plus miscellaneous income, divided by total costs.

Source: Transports Publics Genevois (2020a), pp. 46, 47, 62 (Glossaire); Transports Publics Genevois (2021c), pp. 42, 43, 58 (Glossaire); Interview with the transport department of the Canton of Geneva

Service frequency, passenger information and intermodal connections⁷¹

In normal times, line 17 operates from 05:00 to 23.55 from Monday to Saturday. On Sundays and public holidays, the tram operates from 05:00 to about 23.45.

During peak hours, the tramway line 17 operates at a high service frequency (i.e. there is a tram every 8 to 9 minutes). Each tram can carry 237 passengers (of which 66 can sit) and has accessibility for people with reduced mobility.

A ride from the current end-point in Annemasse city centre (Parc Montessuit - Villa du Parc) to the Swiss border takes less than 7 minutes. From the border to the end point in Lancy-Pont-Rouge station, a ride takes 35 minutes. Passengers can therefore travel from one end to the other in 42 minutes.

Each tram stop has passenger information terminal (borne d'information voyageurs, BIV), which displays the waiting time for the next tram or bus connections in real time.

On the French side, however, tramway line 17 does not directly service Annemasse train station, which is the access point to the Léman Express (CEVA). This choice was made deliberately since the tram route was designed by considering population density and the needs of a proximity service. Nevertheless, the future tram stop at Place Deffaugt is 500 metres from Annemasse station (a 6 minute walk) and benefits from several bus connections (including the BHLS TANGO) that go to the station.

Tickets and fares⁷²

Ticket prices for tramway line 17 are defined on ground of the two-tier tariff system established at the end of 2019: this includes Unireso for the Canton of Geneva and Léman Pass for cross-border journeys (see Section 2.3 above).

Due to these two tariff systems, different fares apply to different types of journeys that customers can realise with the cross-border tramway line 17:

- For journeys between two Swiss tram stops, fares correspond to those applied in the tariff zone 10 that is governed by the Unireso transport association. With a Unireso ticket or season ticket, people can travel on all TPG trams in the Canton of Geneva (zone 10).
- For journeys between two French tram stops, fares are those applied by the public transport system of Agglomération Community Annemasse (TAC) and correspond to tariff zone 210 of the Léman Pass. Prices are at EUR 1.60 euros for a single ticket and EUR 12.80 for a book of 10 tickets. TAC-subscriptions such as Annemasse Pass are valid throughout Agglomération Community Annemasse including on tram line 17 up to the border stop Moëllesulaz.
- For cross-border journeys on tramway line 17 (i.e. journeys combining Unireso zone 10 and Léman Pass zone 210), the Léman Pass tariff applies. A journey from Geneva to Annemasse, for example, requires either a Léman Pass ticket, a season ticket (covering the entire cross-border journey), or a complementary Léman Pass ticket which allows completing the journey outside the zone covered by the Unireso ticket already purchased. The reverse applies if a person from Annemasse wishes to travel to Geneva.

After the installation of contactless payment terminals in all TPG ticket distributors in 2018, the old cart@bonus was replaced by an electronic purse (TpgPay). This prepaid, contactless, rechargeable and transferable card simplifies access to public transport for occasional users. tpgPay is available in euros or Swiss francs and allows users to buy a

⁷¹ Annemasse - Les Voirons Agglomération (2021); Wikipedia (2021i); Transports Publics Genevois (2021d)

⁷² Unireso (2021b) ; Transports annemassiens collectifs (2021b); Wikipedia (2021i)

ticket or day pass quickly and easily from the automatic ticket machines on the network or on-board of vehicles⁷³.

3. Obstacles and solutions

Since the commissioning of tramway line 17 in December 2019, no day-to-day legal or administrative or technical problems were encountered, except for the impact of the Corona crisis⁷⁴. However, adverse politico-administrative developments during the set-up substantially delayed commissioning of the cross-border tramway service.

Table 3.1 Overview of obstacles

Obstacle	Impact on service delivery	Impact on the cross-border region	Solution introduced / proposed	Level of success of the solution
Delayed financial agreement and route planning	Late start of the tram service	A longer than necessary negative environmental impact from individual car use and inconvenient cross-border commuting	Agreements found	High

3.1. Delayed commissioning of the cross-border tramway line 17

3.1.1. Impact of the obstacle

The cross-border tramway line 17 should have started in 2016, but various impediments hindered timely commissioning of the service. Preparatory work for the cross-border extension of the Geneva tramway to Annemasse began in 2015, but the actual start of infrastructure works was delayed for three years due to several adverse developments.

One of these developments resulted from Switzerland's role as one of the few countries in Europe that finances public transport projects in neighbouring territories to a considerable extent. Connected to this, however, is the legitimate question of how much Swiss taxpayers' money should support public transport investments in neighbouring border regions. This question also arose in Geneva when Switzerland had already paid more than EUR 16 million to finance works on the Léman Express train station in Annemasse and the Federal level had also agreed to finance 40% of the French-sided infrastructure work to extend the cross-border tramway line 17 (see Section 2.4 above)⁷⁵.

A popular initiative was organised in the Canton of Geneva to decide on co-financing for five Park & Ride facilities across the border in France⁷⁶. The initiative resulted in a no-vote in 2014 temporarily halting the development of a more sustainable pattern of cross-border mobility in the Annemasse-Geneva area (i.e. reduced cross-border commuting

⁷³ Transports Publics Genevois (2020a), p. 21

⁷⁴ Interview with the transport office of the Canton of Geneva

⁷⁵ Interview with the transport office of the Canton of Geneva

⁷⁶ The popular vote implied granting of a credit of CHF 3.1 million to co-finance 47% of the construction of five Park & Ride facilities with a total of 831 spaces in neighbouring French cities of Veigy, Annemasse, Valleur and Saint-Julien-en-Genevois.

by car and related traffic congestion)⁷⁷. Although Canton of Geneva takes responsibility for this cross-border context and tries to achieve solutions with its limited political means, this is not made easier by recurrent demands from local French partners to invest more and more⁷⁸.

This no-vote of 2014 and its law-making character also caused a political spin-off that delayed the set-up of the funding package for the cross-border extension of tramway line 17. Already at an early stage of the project, the Canton of Geneva had informally agreed a EUR 30 million contribution to finance the French extension. However, the new Geneva-internal situation after the no-vote led this contribution into a political deadlock. At a time when most of the financial package was already secured by the other co-financing parties (i.e. EUR 70 million euros, including contributions from the French State, Rhône-Alpes Region, Annemasse Agglomeration and the Swiss Confederation), a local dispute emerged about the now missing contribution. At a certain point of this dispute, politicians from the Annemasse area even suggested taxing non-declared Swiss nationals living 'illegally' on the French side to secure funding for the extension⁷⁹. This threat was disproportionate especially since the Canton of Geneva pays neighbouring French local authorities (including Annemasse Agglo) more than EUR 300 million a year for investments by virtue of the provisions under the bilateral double taxation agreement. Finally, the French financial package had to be re-designed to cover the missing Canton of Geneva contribution⁸⁰.

Further difficulties arose from a Geneva-internal technical planning discussion about the line-option for the cross-border service. Various possibilities were discussed in 2017 based on the existing tramway network, but the Swiss terminus had not yet been defined. Only in August 2018, was the previously decommissioned line 17 with the Swiss-sided terminus at Lancy-Pont-Rouge train station chosen as preferred solution. This was validated in a cantonal planning document published in December 2018⁸¹.

Despite these hindrances, the French-sided construction of the tramway line was started on 30 January 2017, half a year later than the line was due to be commissioned.

In February 2017, the Moëllésulaz border customs building was demolished as it blocked the future light-rail support platform. A symbolic positioning of the first rail took place at the border on 20 February 2017. Subsequently, diversion of the underground sewer and cable networks was carried out from May 2017 onwards. The first rail was actually laid on 9 October 2018 in the presence of French and Swiss officials, while the further development of the tram's roadway took place until 2019. The final trial run on rails of the tramway before its commissioning was originally scheduled for mid-April to 27 August 2018. However, the trials could only be started on 14 October and lasted until December 2019. The final test on the French section was often disrupted by cars and trucks parking, driving or getting stuck in the grass planted on the light rail supporting platform⁸².

3.1.2. Possible solutions

The delayed commissioning of tramway line 17 was mainly caused by diverging views on the politically very sensitive issue of cross-border infrastructure financing and slow administrative planning of the Geneva-sided line options. However, neither factor would have been solved by more intense cross-border cooperation. Instead, the parties continued working individually to produce the necessary elements for reaching the commonly desired final result: the successfully commission the new cross-border tramway line 17.

⁷⁷ RTS - Radio Télévision Suisse (2014a); RTS - Radio Télévision Suisse (2014b)

⁷⁸ Interview with the transport office of the Canton of Geneva

⁷⁹ Le Temps (2014)

⁸⁰ Interview with the transport office of the Canton of Geneva

⁸¹ Wikipedia (2021i)

⁸² Wikipedia (2021i)

4. Conclusions and lessons learnt

Tramway line 17 'Geneva - Annemasse' has operated since mid-December 2019 and is part of a wide range of domestic and cross-border public passenger transport services across Greater Geneva. This cross-border agglomeration with around 1 million inhabitants has one of Europe's most developed and integrated cross-border public transport systems.

The cross-border tramway service between Geneva and Annemasse city centres was a big success in terms of passenger use already 2 months after its commissioning. It facilitates cross-border movements of inhabitants living in the neighbouring urban areas, reducing congestion and environmental pollution from individual car use. The new tramway line also has positive effects on urban development in Agglomeration Community Annemasse on the French side.

Beyond these more "local" impacts, tramway line 17 also has a specific function for and positive effect on public transport within the Greater Geneva cross-border agglomeration: it provides a proximity-based passenger transport service between Annemasse Agglo and Geneva city that complements the centre-periphery service of the six cross-border rapid railway lines in the central part of the Léman Express (CEVA).

An element particularly worth highlighting is that both cross-border services, as well as many other domestic and cross-border public transport services in Greater Geneva (e.g. bus, train, tram and boat), are part of a specifically designed two-tier system for tariff integration. Since December 2019, this system has two inter-linked transport associations: Unireso covers all public passenger transport services in the Canton of Geneva, while Léman Pass covers all cross-border public passenger transport services leading to immediately adjacent or non-adjacent areas on the French side.

Another interesting feature of tramway line 17 is the cooperative management of the set-up, operation and financing of the service. Cross-border integration is achieved by three contractual elements and a joint cooperation structure:

- A cross-border cooperation agreement concluded in 2019 between the Canton of Geneva and the Agglomeration Community Annemasse.
- A public service provision contract between Canton of Geneva and the tramway operator Geneva Public Transports for the Swiss part of the service.
- A negotiated contract of public service delegation concluded between Agglomeration Community Annemasse and Geneva Public Transports for the French part of the tramway service.
- The establishment of a cross-border Political Steering Committee, which plays an important role in the ongoing operations of tramway line 17.

This comparatively light and contract-based governance model could also be interesting for other EU borders as it does not require a specific cooperation structure with its own legal personality.

During the set-up, however, the new cross-border tramway line 17 'Geneva - Annemasse' was affected by a number of obstacles. These obstacles hindered timely commissioning of the service since its start was originally planned for 2016.

Since the commissioning of tramway line 17 in mid-December 2019, both sides are fully mobilised to achieve the next cross-border tramway extension: this is the two-sided extension of tramway line 15 to Saint-Julien-en-Genevois (Département Haute-Savoie) and Ferney-Voltaire (Département Ain, arrondissement Gex), which should become operational in 2024 and 2026 respectively.

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Interviews

Interviewee	Organisation	Interview date
Benoît PAVAGEAU, public transports director of the cantonal office of transports	Republique et Canton de Geneve, Département des Infrastructures (DI), Office Cantonal des Transports	19.07.2021

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