



RECOMMENDATIONS FOR A
SUCCESSFUL **CABLE CAR**
TRANSPORT PROJECT IN
CITIES OF THE GLOBAL
SOUTH

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Codatu

Agir pour une mobilité soutenable dans les villes en développement

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Introduction

Aerial lift or cable car is an innovative mobility solution well suited to certain cities in the Global South. This mode of guided and aerial transport can fly over urban divides, responding to space and topographical constraints while potentially offering a silent, low-carbon and efficient alternative to traditional transport systems. Integrated into a multimodal network, the cable car can play a key role in opening up isolated districts and improving people's travel conditions. In some cases, it can constitute a structured network on its own.

To guarantee the success of an urban cable car project, it is essential to start with a clear understanding of its specific features and potential. The cable car first stands out for its ability to respond to geographical constraints while offering solutions adapted to dense urban contexts. It is essential to consider beforehand the relevance of a cable car project according to the area in which it is to be installed and the projected traffic flows. Secondly, the technical characteristics of this mode of transport require meticulous planning and particular attention to its integration into the landscape and existing transport networks. Finally, a project's success depends on local stakeholders' ability to answer fundamental questions about governance, financing, maintenance and social acceptability.

These recommendations are the fruit of collaborative work carried out by the Codatu team with its members, based on analysing the specific experiences and challenges of cities in the Global South regarding cable car projects. The Codatu working group brought together volunteers from the association and representatives from consulting and construction firms, operators and local authorities, who took part voluntarily in four discussion sessions between November 2024 and February 2025. This diversity of contributors has made it possible to bring together several points of view to draw up a comprehensive list of recommendations to increase the likelihood of a cable car project succeeding. The aim is to provide decision-makers, project developers and local operators with the keys to overcoming an urban cable car project's technical, economic, institutional and social challenges while maximising the benefits for the populations concerned. These recommendations do not replace in-depth studies, which are necessary and specific to each cable car project.



Cable car in Santo Domingo (Dominican Republic) ©Codatu

When is cable car transport appropriate?

Before planning a cable car transport, it is essential to consider the relevance of introducing such a mode in a given area. This analysis must be carried out as part of in-depth studies that include a demand study, an analysis of alternatives and a socio-economic assessment.

The choice of a cable car responds to the absence of a simple land-based transport solution, making it possible to bypass steep slopes, urban breaks, dense areas or fragile ground. A solid study of land-based alternatives must back up the overhead solution. Although public space is often invaded by car traffic, aerial mode should not be based solely on traffic pressure on other uses.

As with any public transport project, the cable car must be based on attraction area studies that make it possible, on the one hand, to estimate demand and, on the other hand, to envisage modal shift or even induced demand (generated trips by the new transport supply). These studies must be carried out objectively by independent bodies based on factual data (counts, journey times), economic data (value of time) and social data (stated and revealed preferences surveys).

As with other modes of transport, the cable car has advantages (generally less land-consuming, quicker trips, cheaper to build, etc.) and certain limitations (typically lower capacity than a rail mode, issues of social acceptability, etc.). Therefore, evaluating this mode according to the context of the area under study and defining its characteristics (choice of technology, length, number of stations, etc.) is essential.

If a cable car project is relevant to your area, then look at the nine recommendations proposed to ensure the success of your project!

1 Identify and coordinate the stakeholders

The aim is to **establish consultation and coordination between the stakeholders** to maximise the effectiveness of the project.

- Identify the key players (local and national authorities, manufacturers, residents' associations, citizen organisations, transport cooperatives, etc.) and their interactions, considering the informal structures that play a central role in urban transport in cities in the Global South.
- Set up a steering committee, which can be directly structured by the local authority or mixed, bringing together representatives of local authorities, formal transport and paratransit operators and users.
- Undertake mobility studies of the area concerned, including an analysis of the socio-economic conditions of the inhabitants, as well as a gender analysis to take into account the specific needs of women and adapt the service to reduce gender inequalities.
- Create a platform for ongoing dialogue with residents to ensure that their concerns (overflight, noise, lack of safety) are taken into account from the design phase onwards through educational work to reassure them.

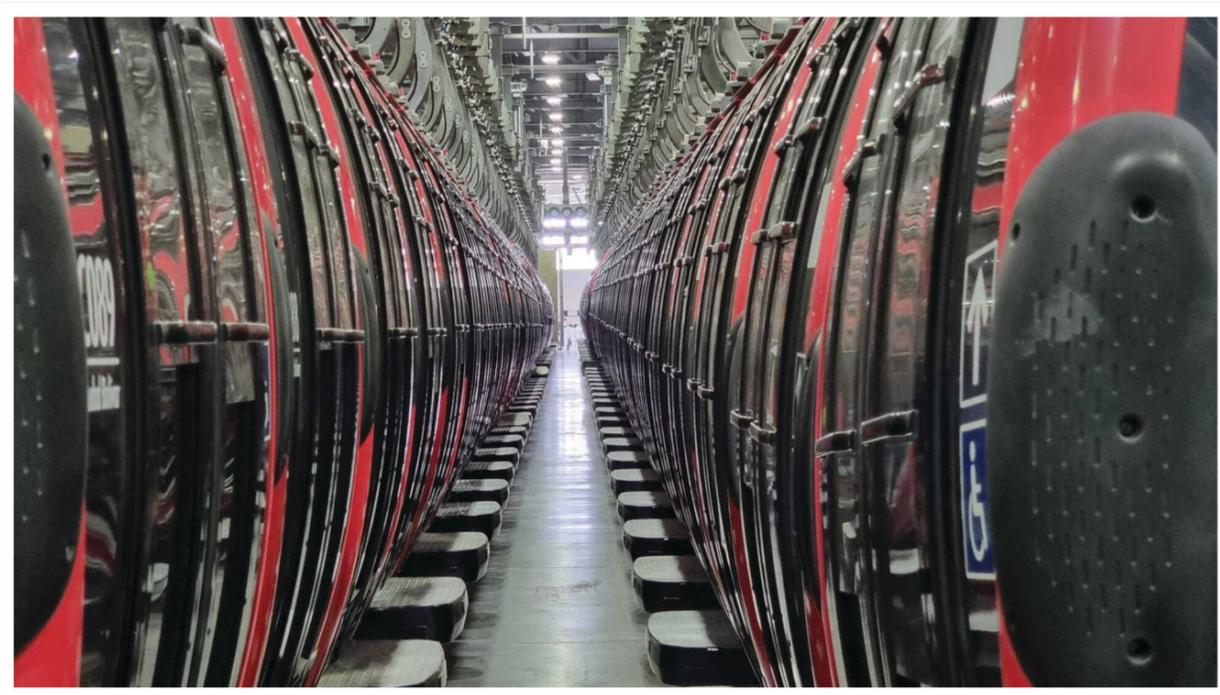


Residents of a district served by a cable car in Medellín (Colombia) ©LatinAmerica Reports

2 Building the capacity of local players

The aim is to **create local expertise to ensure the effective management of the cable car** over the long term.

- Participate in or organise training programmes, including modules on the cable car's technical features, to build local authorities' capacity to supervise and manage operations.
- Set up partnerships with universities and research centres to develop solutions tailored to local contexts and with local technical training centres to ensure a constant supply of qualified technicians.
- Find out about good practice guides on cable cars and facilitate exchanges with other cities in the Global South that have implemented similar projects (Medellin, Bogota, La Paz, etc.) to share experiences. Codatu is networking with these players and the International Cable Transport Organisation (OITAF).



Depot of Ciudad Bolivar cable car in Bogota (Colombia) ©Codatu

3 Establishing a sustainable economic model

The aim is to **guarantee the project's financial sustainability while maintaining equitable access to the cable car** for the local population.

- Provide subsidies to ensure the long-term operation of the cable car. On the one hand, construction is an investment for local and/or national authorities, which can apply for loans from lenders. On the other hand, for the operation, the authorities will have to put in place an annual subsidy because fares will not fully cover the expenses.
- Compete with other construction companies and use local suppliers to reduce construction and operating costs while supporting the local economy.
- Define the type of operation contract for the cable car (public-private partnership, public service delegation or public service management), which must comply with key performance indicators (KPIs).
- Diversify revenue sources by licensing commercial activities around the stations (shops, advertising, tourism concessions) to reduce fare revenue dependence.
- Explore using renewable energies (solar, wind) to reduce the cable car's operating costs and carbon footprint (solar panels installed on the cabins to supply energy for lighting and security cameras), and include compensatory environmental measures.
- Implement a strategy to promote public transport and the cable car (a fast, innovative, reliable and environmentally friendly mode of transport) to increase ridership and create financial incentives to encourage users to use the cable car together with other modes of transport (fare integration, multimodal season tickets). Fares must consider the income of local residents and the fares of other competing modes of transport.
- Where appropriate, introduce differentiated fares for local users and tourists to maximise revenue while maintaining accessibility for residents.



Trade in a cable car station in La Paz (Bolivia) ©Remontées-mécaniques.net

4 Putting in place an appropriate regulatory framework

The aim is to **create a legal and institutional environment conducive to the implementation and sustainable operation of the cable car.**

- Adapt regulation to include specific considerations for bypassing in urban areas. It is also necessary to ensure compliance with current regulations on land ownership, expropriation and pre-emption rights.
- Rely on established European standards (TC 242 standard specified on page 14) while taking into account local financial and technical realities, and use the references of the STRMTG (Service Technique des Remontées Mécaniques et des Transports Guidés), the supervisory authority in France (texts RM1 and RM2 of the STRMTG specified on page 14).
- Secure the cable car corridor and ensure monitoring to prevent violations of established standards. This involves avoiding the development of informal activities or constructions within the TPC corridor, which could pose risks of fire and collision.
- Develop appropriate environmental protocols, including compensation mechanisms for impacts on biodiversity or landscapes.

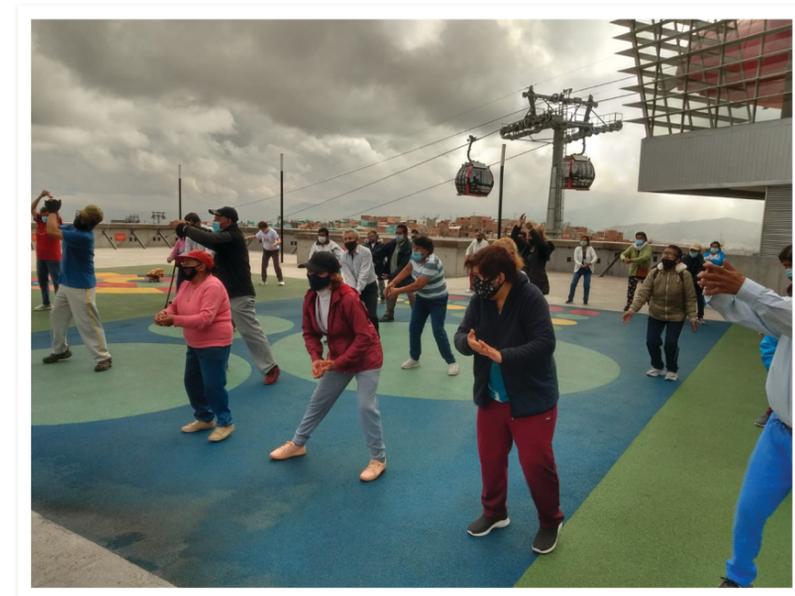


Overflight of homes by the cable car in Medellín (Colombia) ©Remontées-mécaniques.net

5 Analysing social and economic needs

The aim is to **meet residents' expectations and maximise the positive impact on their quality of life.**

- Carry out specific socio-economic studies to identify the needs of residents and the potential impact of the cable car implementation. It is also necessary to determine the concerns of future users and local residents in adapting the cable car system (remote surveillance, aversion, human presence, etc.).
- Integrate social and urban development projects in and around stations, such as public facilities, services, sports facilities, shopping concessions and public spaces, to revitalise the areas served.
- Promote local employment during the construction and operation phases to encourage positive economic spin-offs.
- Identify needs and take action for vulnerable populations to reduce gender inequalities (care centre, childcare service, help with administrative formalities, activities for older people, citizen safety, etc.).
- Consider non-quantifiable data and non-monetisable benefits the cable car provides (time savings, social and environmental benefits, improved quality of life) to complete the project assessment beyond purely financial arguments.



Social centre at the Manitas cable car station in the Ciudad Bolívar district of Bogotá (Colombia) ©Bogota City Council

6 Anticipating infrastructure and maintenance needs

The aim is to **guarantee cable transport's durability and operational reliability** in often constrained environments.

- Develop resilient infrastructure adapted to local climatic constraints (heavy rainfall, intense heat) and the area's complexities. Do not underestimate the land required for the depot, stations and maintenance workshops.
- Facilitate maintenance, standardisation and redundancy of equipment as possible action pathways.
- Provide mobile or decentralised workshops for remote areas to reduce downtime in the event of a breakdown.
- Maintain a relationship with the original manufacturer of the cable car system to guarantee its safety (supply of original spare parts, after-sales service with technical support and specific training, etc.). If available, include local solutions, such as using materials or services to reduce costs and enhance social acceptability.
- Think about the possibility of extending the line beforehand, because the scalability of a cable car line can be complicated to put in place once the first line has been built.



Cable car maintenance workshop in Cali (Colombia) ©Remontées-mécaniques.net

7 Favouring appropriate urban integration

The aim is to **ensure that cable car transport blends harmoniously into the urban landscape and maximises its social acceptability.**

- Mobilise skills in landscape, architecture and design for the conception of the project in all its components (pylons, cabins, stations, workshops, and public, urban and landscape developments) to ensure the proper integration and sustainability of the proposed solutions. The aim is also to achieve public transport quality standards (ergonomics, user information, robustness, operability) to optimise the user experience.
- Carefully study the objectives set by the contracting authority in terms of line capacity before launching the operation (number of passengers per hour and direction), design (towers and cabins), route (areas to be served) and availability (redundancy of installations). These factors strongly influence the cost, resources and impact of the line.
- Working with residents to design infrastructure reflecting their cultural identities, encouraging them to take ownership of the project.
- Take account of the topography, landscape and urban form to propose a route and infrastructure that are in keeping with the shape of the area and offer scope for development.
- Create multifunctional areas (markets, parks, shops, public services) around stations to stimulate economic activity and enhance the attractiveness of the neighbourhoods served (accessibility working both ways) while ensuring that the line remains easily accessible.



Access to a cable car station in La Paz (Bolivia)
©Remontées-mécaniques.net



Mural on a cable car station in Ecatepec on the outskirts of Mexico City (Mexico)
©Remontées-mécaniques.net

- Develop accessible areas for active modes of transport (cycle paths, wider pavements and safe crossings) that are safe (public lighting, ramps). Take into account the specific mobility needs of women (they are more often accompanied by children and carrying heavy loads, for example). To facilitate bicycle access, it is possible to create bicycle garages integrated into the station, possibly with a guarding system provided by the operator.

8 Ensuring integration into the existing network

The aim is to **integrate cable transport into an overall mobility and urban planning scheme to ensure effective intermodality and complementarity between cable cars and other modes of transport.**



Fare integration and single ticketing system for Medellín's multimodal network (Colombia) ©El Tiempo

- Map the formal and informal transport networks to identify strategic feeder points and maximise interconnections with cable car lines. It is important to specify that this mode of transport cannot operate by simple cabotage but must rely on interchanges to encourage ridership. Within each of these hubs, a site manager must be identified, who may be one of the operators present on the site and responsible for administering, securing, maintaining, humanising, maintaining and animating the space.

- Design suitable multimodal hubs, if possible, connected to mass transit (metro, BRT, tramway), feeders (suburban and urban feeder buses), infrastructure for active modes (cycling and walking), as well as areas dedicated to taxis and paratransit (minibuses, moto-taxis, etc.). Intermodality with a public transport network must include waiting areas due to the frequency and throughput of each mode.

- Introduce integrated fares and a single ticketing system so that the cable car is an integral part of the city's transport network and users can transfer easily from one mode to another.

- Carry out a specific study on the integration of paratransit to promote complementarity between the cable car and these services (integration of fares, ticketing and stations). Where appropriate, provide for gradual regulation/formalisation mechanisms to integrate paratransit operators into the overall network, while endeavouring to minimise conflicts of interest.

- Introduce digital tools to coordinate timetables (particularly for connections) and improve the user experience (for example, by introducing an application to plan multimodal journeys).



Intermodal station on the cable car line in Manizales (Colombia) ©Remontées-mécaniques.net

9 Setting up a monitoring and control system

The aim is to **ensure the project's performance, sustainability and transparency through rigorous and independent monitoring. Depending on the initial set-up, the public transport authority or the operator will be responsible for steering the project.**

- Involve users and citizen organisations in the evaluation process by introducing tools to provide feedback (satisfaction surveys, digital platforms) to adapt services to user needs in real time.

- Establish a team dedicated to monitoring key indicators (frequency, safety, user satisfaction, operating revenue) with regular audits carried out by an independent body. If the operator meets, exceeds or fails to meet the targets set, it may receive a bonus or penalty accordingly.

- Draw up an overall performance scorecard: bringing together economic, social and environmental indicators to assess the project's overall impact on the city and the neighbourhoods it serves.

- Prepare contingency plans: include measures to manage unforeseen interruptions (natural disasters, technical failures) and guarantee a minimum continuity of service.

Conclusion

Cable car transport is more than just a mode: it embodies a modern and integrated vision of urban mobility, a tool for transforming neighbourhoods and opening up isolated areas. However, the success of such projects depends on rigorous planning, clear governance and careful consideration of local specificities.

This list of recommendations is aimed at stakeholders in cities in the Global South, to guide them in the development of a cable car project, from design to operation and evaluation. Based on stakeholder coordination, thoughtful urban integration, optimised intermodality and a sustainable economic model, cable cars can meet the expectations of local authorities and users while respecting local technical and financial constraints.

Finally, the cable car should be seen not only as a mobility tool but also as a lever for urban and social transformation. By adopting these recommendations, local decision-makers and stakeholders have the keys to ensuring the long-term success of their projects, while contributing to more inclusive and sustainable urban development. Codatu remains committed to working alongside cities in the Global South to share its expertise and support them in implementing solutions tailored to their local realities.

References

- **REMONTÉES-MECANIQUES.NET** - Url: <https://www.remontees-mecaniques.net/> This French-language website offers detailed information on the world's existing cable transport technologies, including a census and classification of all the infrastructures identified, pictorial news and discussion forums. It is a source of factual information for the study of this mode of transport and serves as a resource for professionals and enthusiasts of this industry.

- **CERTU** - Transport Par Câble Aérien en Milieu Urbain, 2012. Url: <https://bit.ly/4hSbKjU> This French-language report presents the advantages of urban cable transport, particularly for relieving congestion on existing networks, by addressing its technical, economic and environmental aspects.

- **CEREMA** - Le développement du transport par câble aérien en France : Enjeux et perspectives, 2018. Url: <https://bit.ly/3Xg1zNV> This French-language document analyses the state of cable transport in France, its challenges, the obstacles to be overcome and the prospects for developing this technology to improve urban transport.

- **CEREMA** - Le Transport Par Câble Aérien en Milieu Urbain, Domaine de pertinence, cadre réglementaire et panorama des projets en France, 2022. Url: <https://bit.ly/3ET4ztc> This French-language report provides an overview of urban cable transport projects in France, detailing the areas where this solution is relevant and the regulatory constraints to be taken into account.

- **CEREMA** - Pour une accessibilité universelle du transport par câble aérien en milieu urbain, Cadre légal et recommandations pour les porteurs de projet, 2023. Url: <https://bit.ly/3QzCKJ6> This French-language guide sets out recommendations for making cable transport accessible to all, particularly the disabled, highlighting the legal framework and good practice for project developers.

- **TC 242** - Url: bit.ly/3D6ZQDy European standards for cable cars, safety specifications for cableway installations designed for passenger use.

- **STRMTG - RM1** : Exploitation, Modification et Maintenance des Téléphériques, 2023. Url: <https://bit.ly/4ih8Wg5> This French-language document describes the rules for the operation, modification and maintenance of cable cars, focusing on safety requirements and compliance with current standards.

- **STRMTG - RM2** : Conception Générale et Modification Substantielle des Téléphériques, 2023. Url: <https://bit.ly/4kbk0gv> The French-language report covers the technical criteria and regulatory requirements for the design of new cable cars or significant modifications to existing installations.

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Pylons of the cable car of Ciudad Bolivar in Bogota (Colombia) ©Codatu



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ABOUT CODATU

Codatu is an international non-governmental organisation created in 1980 in Dakar during the World Conference on Urban Transport. Its mission is to promote sustainable urban mobility in the cities of the South.

Codatu helps to build the capacity of transport decision-makers and players in the countries of the South, by proposing cooperation between cities and exchanges of experience (scientific, technical, economic, etc.).

Historically dedicated to organising international conferences, Codatu has diversified its activities and now also manages technical cooperation, training and publications on urban mobility issues in developing countries.

These various activities, carried out by Codatu's team of employees and volunteers, are carried out in partnership with French (Agence Française de Développement, Ministry of Ecological Transition, etc.) and international (World Bank, European Union, etc.) economic and institutional players.

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