# Khyber Pakhtunkhwa Province, Pakistan

## Context

The Khyber Pakhtunkhwa (KP) province has embraced Sustainable Urban Mobility Plans (SUMPs) for its main cities. With technical and financial support from the Agence Française de Développement (AFD) and the Asian Development Bank (ADB), a joint project supported the preparation of SUMPs for Peshawar, Abbottabad and Mingora between 2021 and early 2024.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan in Peshawar, Abbottabad, and Mingora
**Funded by:** Agence Française de Développement (AFD)
**Funding amount:** EUR 1,200,000
**Implemented by:** AFD and Asian Development Bank (ADB) through MobiliseYourCity Asia
**Local counterpart:** Transport Department, Government of Khyber Pakhtunkhwa province and the Khyber Pakhtunkhwa Urban Mobility Authority
**Consultant(s) involved:** Systra and Exponent Engineers
**Project start:** 2021 Q3
**Project completion:** 2024 Q1


Peshawar, Pakistan 2

Abbottabad, Pakistan 6

Mingora (Swat District), Pakistan 17

# Peshawar, Pakistan

Sustainable Urban Mobility Plan — Completed

## Basic information

| | | |
|---|---|---|
| Urban area | → | 1,217 km² |
| Population | → | 4,269,079 |
| Growth rate | → | +3.29% |
| Region capital city of the Khyber Pakhtunkhwa province | | |
| GDP per capita | → | USD 1,406 (National level) |
| **Modal share** | | |
| Public transport (excl. BRT) | → | 6% |
| BRT | → | 4% |
| Private cars and motorbikes | → | 25% |
| Walking | → | 55% |
| Rickshaws | → | 6% |
| Other | → | 4% |
| National GHG emissions per capita | → | 1.99 (tCO2eq) |
| Exposure to climate change | → | HIGH |

## Context

Peshawar is the capital of Khyber Pakhtunkhwa province, located 160 km west of Pakistan's capital, Islamabad. It is home to 1,970,042 inhabitants, spread over 157 km², and its metropolitan area has 4,269,079 inhabitants across 1,217 km². The city is governed by the Peshawar Municipal Corporation.

Recently, Peshawar has introduced a Bus Rapid Transit (BRT) system named "Zu Peshawar". This system, conceived and built with support from the Asian Development Bank (ADB) and the French Development Agency (AFD), commenced operations in August 2020. Operated by TransPeshawar, the BRT system comprises a main corridor stretching over 28 km from Chamkani in the east to Hayatabad and Karkhano Market in the west. Additionally, it features a 68 km-long network of 8 feeder routes connecting the main corridor to other parts of the city. The introduction of the first BRT line has already begun to alter this modal share, as it is attracting users to this public transport service[1].

[1] A video highlighting the BRT is available here: https://youtu.be/nWlB55ZqDQo?si=35yy--6iqDdal8Wg

Peshawar faces challenges stemming from an inadequate public transportation system, leading residents to rely heavily on private cars, which in turn causes traffic congestion, road safety concerns, and poor air quality. The city lacks a sufficient road network, infrastructure for non-motorised transport, and effective traffic management. Moreover, the city has recognised the need for improved control over land use and urban development.

To address these challenges and prepare a comprehensive plan that not only addresses transport issues but also improves quality of life, the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA) has opted to develop a SUMP. This plan will encompass not only mobility-related issues but also considerations of local economic development and health. Furthermore, the SUMP will facilitate the development of a Transport Management Plan and the establishment of a Road Safety Authority. It will also include initiatives to improve Non-Motorised Transport options and equip the city with better monitoring capabilities for traffic and GHG emissions. Lastly, the SUMP will build KPUMA's capacity for sustainable mobility planning.

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost estimate (EUR) |
|---|---|
| Kabul Canal | 3,300,000 |
| GT Road Upgrade | 1,300,000 |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

| Urban transport investment measures | CAPEX Estimate (EUR) |
|---|---|
| Road network | 221,800,000 |
| Urban transit | 916,900,000 |
| Non-Motorized Transport (NMT) | 30,500,000 |
| Urban logistics | 12,000,000 |
| Transit Oriented Development (TOD) | 10,500,000 |
| TOTAL | 1,191,700,000 |

# Projected impacts

| Indicator | BAU 2022 | Scenario 1 (2040) Compact City | Scenario 2 (2040) Scattered City | Scenario 3 (2040) Southern Extension |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt CO2eq)** | 1,214,600 tCO2eq | 927,640 tCO2eq | 1,214,600 tCO2eq | 960,830 tCO2eq |
| **Annual transport related GHG emissions per capita (kg CO2eq)** | 0.22686 tCO2eq/ capita | 0.152 tCO2eq/ capita | 0.199 tCO2eq/ capita | 0.158 tCO2eq/ capita |
| **Trips Daily Average Total generated trips** | 6,368,800 | 15,212,600 | 15,229,800 | 15,226,200 |
| **Modal share Related to the carbon footprint** | 6,368,800<br>Motorcycle: 24%<br>Car: 49%<br>Paratransit: 26%<br>BRT: 2% | 15,212,600<br>Motorcycle: 31%<br>Car: 50%<br>Paratransit: 9%<br>BRT: 9% | Motorcycle: 32%<br>Car: 48%<br>Paratransit: 14%<br>BRT: 7% | Motorcycle: 30%<br>Car: 49%<br>Paratransit: 10%<br>BRT: 11% |

# Insights from practice: lessons learned from the SUMP process

## Governance issues remain after the planning process

The institutional framework of the transport sector in the Khyber Pakhtunkhwa province presents significant challenges linked with siloed operations and overlapping responsibilities. These issues highlight the need for clearer mandates, capacity building, and enhanced coordination mechanisms to streamline the SUMP process.

# Perspectives for implementation

## The SUMP's administrative approval has been secured, and the process to obtain political approval is currently underway.

Following the completion of the three SUMPs in the Khyber Pakhtunkhwa province, public transport is recognised as a priority, and additional feasibility studies are expected to be conducted at the provincial scale. The city is expected to draw further inspiration from the SUMP's strategic directions, including the implementation of green corridors.

The Peshawar BRT system's Phase 2 has been validated and is progressing with financial planning to further improve urban mobility and accessibility for residents.

## Zu Peshawar: The First Gold Standard BRT in Pakistan is changing the way people travel

The authorities responsible for urban mobility in Peshawar have an ambitious vision to transition towards more sustainable urban transportation. As part of the SUMP preparation, supported by MobiliseYourCity partners, significant investments are foreseen, including the development of the Zu Peshawar BRT, the first Gold-Standard BRT in the Indian subcontinent.

Peshawar's ambition and efforts in sustainable mobility have gained international recognition. In 2022, the city was nominated and received an honourable mention from the International Transport Development Policy (ITDP) Sustainable Transport Award. This recognition highlights Peshawar's commitment to prioritising its citizens' needs and ensuring that their transportation needs are met sustainably and inclusively. More recently, Zu Peshawar received the "Best Smart Ticketing" prize from Transport Ticketing Global and was a finalist for the "Prize for Cities" awarded by the World Resources Institute. As the city progresses with its SUMP and planned investments, it is poised to become a leader in sustainable urban transportation in the region and beyond.

## Peshawar advances with active mobility projects

During the SUMP elaboration process, several conceptual designs for key and priority projects have been developed. Among them is the concept design for the regeneration of the Kabul canal, which aims to transform the space into a non-motorised transport-friendly area. Another conceptual design focuses on upgrading the existing Saddar BRT Station area to create public spaces conducive to non-motorised transport and seamless intermodal connections.

Find out more about this case study, co-developed by ITDP, TUMI and TransPeshawar.

# Abbottabad, Pakistan

Sustainable Urban Mobility Plan — Completed

## Basic information

| | | |
|---|---|---|
| Urban area | → | 1,967 km² (district scale)<br>122 km² (SUMP area) |
| Population | → | 981,590 (district scale)<br>360,000 (urbanised area) |
| GDP per capita | → | USD 1,284 (data from 2019) |
| Baseline motorisation rate | → | 320/1,000 inhab. (motorised vehicle)<br>190/1,000 inhab. (private cars) |
| **Modal share** | | |
| Walking | → | 51%, |
| Private motorcycle | → | 20% |
| Shared motorcycle (moto-taxis) | → | 19% |
| Shared taxis | → | 4% |
| Private car | → | 3% |
| Bicycle | → | 1% |
| Bus (SOTRAL cie) | → | 1% |
| Transport emissions per capita | → | 1.06 (tCO2eq) |
| Exposure to climate change | → | HIGH |

# SUMP summary

| SUMP Status | Adopted |
|---|---|
| SUMP Development Timeline | Joined MobiliseYourCity in Q2 2020<br>SUMP started in Q3 2021<br>SUMP completed in Q1 2024 |
| SUMP Vision | Make Abbottabad an integrated and mobility-wise city. This vision aims to reinforce Abbottabad's unique profile as a city that combines military, education, and tourism in a high-quality, inclusive urban environment, offering a high level of accessibility and connectivity. It relies on promoting a compact city and an efficient mobility system that mutually support each other in sustainable city growth. |
| Key expected results (GHG, modal share and access) | Compared to 2022, in a SUMP scenario, by 2040, Abbottabad can expect to<br>• Create, organise and develop a public transport offer with an objective of 21% (number of trips) and 50% (passenger km) of modal share in 2040<br>• Increase total mobility rate from 2,5 trips per person and per day in 2022 to 3,1 in 2040 and ensure a target of 44% of the trips taken by walk.<br>• Reduce GHG emissions by 35% as compared to a 2050 Business As Usual scenario. |
| Total SUMP Investment Requirement | Urban transport investment measures CAPEX, estimated total amount of EUR 403 million, which includes<br>• Road Network: EUR 55 million<br>• Urban transit: EUR 313 million<br>• Non-Motorised Transport: EUR 13 million<br>• Urban logistics: EUR 9.6 million<br>• Integrated mobility policy: EUR 7 million<br>• Transit Oriented Development: EUR 5 million |

# The SUMP preparation process and stakeholder involvement

The Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA) was created a few years ago, in the context of the development of the first BRT line in Peshawar (main city of the KP Province), as the managing authority of urban mobility for the cities of the KP Province to provide a coherent frame for its development.

KPUMA has led the SUMP elaboration and has associated the different departments of the KP Province competent in the field of transport, namely Communication and Works (C&W), Khyber Pakhtunkhwa Highway Authority (KPHA), Transport Planning Unit (TPU), Regional Transport Authority (RTA), etc. TransPeshawar, as the operator of the Peshawar BRT, was also closely involved in the elaboration of the SUMP.

# Diagnosis of urban mobility in Abbottabad

## Transport services and mobility behaviour

The city of Abbottabad is located 60 km northeast of Islamabad, in the Hazara Division of Khyber Pakhtunkhwa (KP) province, in the northwest of Pakistan. It is a gateway to the picturesque Kagan Valley. It is connected by road to the Indus Plain and the Kashmir region, and by rail to Peshawar. The city is a district market and trade centre, and it stands out as a communication route to China and the northern parts of Pakistan. It has developed strong military and education functions at the provincial and national levels. It also values its climate, landscapes, and position as a gateway to mountain ranges and natural areas, which it uses to develop tourism (Nathiagali, Ayubia, and Naran mountains).

The road network of Abbottabad is rather loose and lacks connectivity. Its hierarchy is unbalanced, with few primary and secondary roads (less than a third of the main roads) and many tertiary roads (more than two-thirds). The overall road network is dysfunctional, with too many small roads and not enough big ones (87% local roads). This network structure concentrates flows along the main axes, leading to congestion, conflicting crossroads, and low resilience to disturbances. Intersections can also experience conflicts and congestion due to the concentration of paratransit and side activities, as well as inadequate flow management.

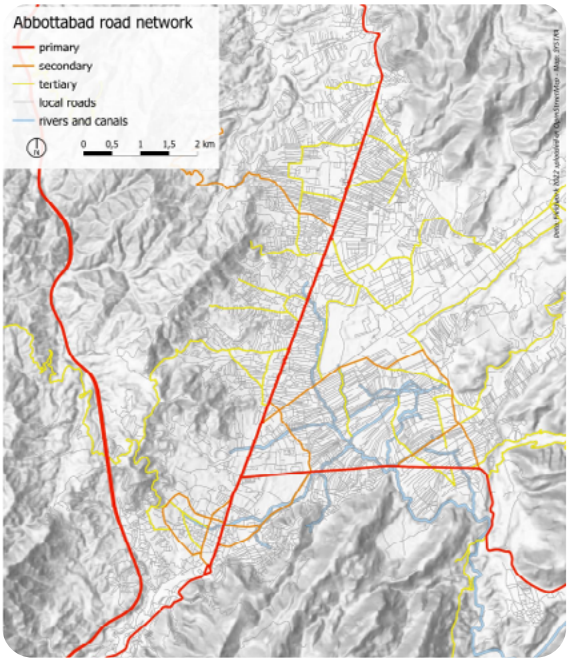


Figure 1 Abbottabad's road network

Road capacity is constrained by the concentration of flows on some key axes and by conflicting uses. Traffic is often autoregulated between the different types of vehicles. Trade, parking and side activities also often push pedestrians off the sidewalks into the lanes. Consequently, effective road capacity can fall beyond its notional capacity.

Paratransit is the most important transportation mode after walking in Abbottabad, accounting for 16% of all modes (including walking) and 45% of motorised modes. Urban services are operated by 12-seat Suzukis and 9-seat Bolans on line-type services running on specific routes. Paratransit hubs are located along the city's key entry/exit road axes in all directions. They interface urban and interurban connections by Suzukis and Bolans. Paratransit is privately operated with little public regulation and no subsidy. Services are tailored to profit and present different flaws. They focus on the main mobility needs, whether in time (weekdays, peak hours) or in space (main axes, main origin-destination pairs). Conversely, other needs and residual demand are poorly or not considered at all, leaving large chunks of demand unaddressed. Fare levels remain affordable for core demand but quickly become much higher and less affordable outside it.

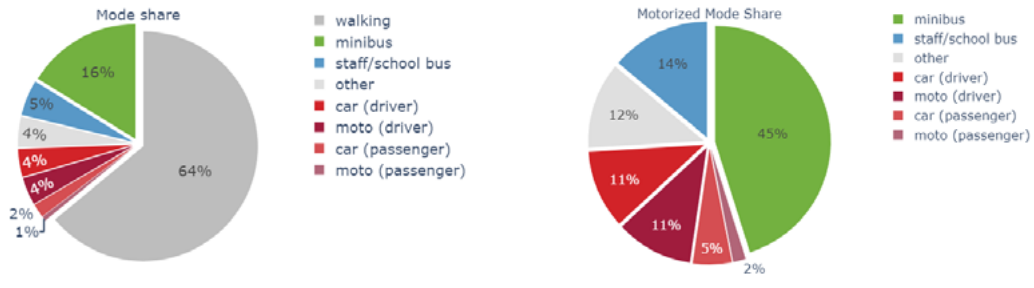


Figure 2 Modal share in Abbottabad (all trips on the left, motorised trips only on the right)

1,290,000 trips are made daily by residents of Abbottabad. The mobility rate is relatively high, at 2.5 trips per person per day. It has a strong gender distinction, but lower than other cities in Pakistan (2 for females and 3 for males).

Regarding modal share, walking is predominant with 64%, while motorised modes account for 46% of total trips. Public transport modes are the predominant motorised modes (60%), of which 45% are minibuses, and 15% are staff and school buses. Private motorised modes account for the rest, with a high share of private cars and motorcycles, which are used less than in other cities and are perceived as unsafe.

## Social, environmental, and economic aspects

The total population of the Abbottabad urban area was 460,000 in 2017 (estimated at 516,000 in 2022). The average population density is 8,200 inh./ sq. km, with big differences across neighbourhoods: it can be below 1,000 inh./ sq. km in eastern and military areas and over 30,000 in some residential pockets.

The population is rather young, with a median age of 21, and households have an average size of 4.6 persons. The city's average share of the employed population is 24%, and the average share of the inactive population is 31%. Students and learners account for 43% of the overall population.

The major part (60%) of the population earns less than 30,000 PKR[2]. Households earning less than 20,000 PKR account for about 16% of the population. Conversely, the share of the population earning more than 40,000 PKR is 33%.

A volume of 64,140 tCO2eq/year is generated by transports, which is equivalent to 0,123 tCO2eq/ year per inhabitant. Two-thirds of GHG emissions are generated by paratransit, a fourth by private cars and 10% by motorcycles.

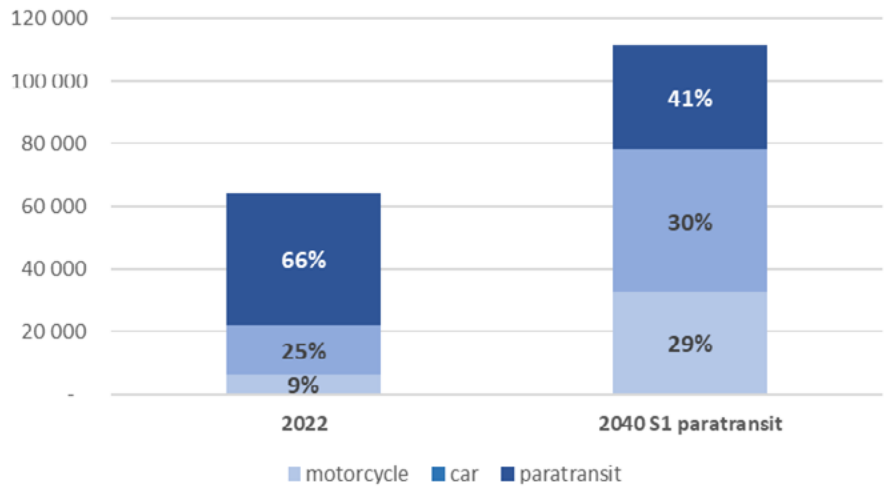


Figure 3 GHG emissions by transport mode in Abbottabad (tCO2eq/year)

## Institutional and financial situation

The organisation of transport and mobility competences is rather clearly defined and concentrated in the hands of a limited number of structures, mostly at the level of the Khyber Pakhtunkhwa (KP) Province. This implies that the decision frame is clear and that decision capacity is significant, without undue uncertainty. However, urban development falls under different decision-making schemes (KP Province, Cantonment board – that is, the local-level designation in a city like Abbottabad), which prevent an overall, integrated approach and have some consequences for mobility.

[2] 1000 PKR is about 3,5 EUR in early 2024.

The KP province administration gathers capacity across different fields of mobility and urban development (strategic and planning studies, project management). At the provincial level, KPUMA was created as the managing authority for urban mobility across the Province's cities to provide a coherent framework for its development. However, as Abbottabad currently has no formal public transport, there is limited interaction among paratransit regulation, road planning, road design, road maintenance, and traffic regulation.

Eventually, there is a lack of decision-making capacity at the municipal level. The local administration lacks capacity, particularly in addressing mobility and transport issues in the city and its surroundings. The overall lack of clear, generalised processes for construction authorisations also limits the capacity to drive urban development in a mobility-wise manner, though urban sprawl remains limited.

# Vision and goals

## Strategic vision:

"Make Abbottabad an integrated and mobility-wise city",

This vision aims to reinforce Abbottabad's unique profile as a city that combines military, education, and tourism activities in a high-quality, inclusive urban environment, offering a high level of accessibility and connectivity. It relies on promoting a compact city and an efficient mobility system that mutually support each other in sustainable city growth.

# SUMP goals and targets

The 2040 mobility vision for Abbottabad particularly considers:

- Both an opportunity and a challenge to unify the city as a well-connected and continuous one. The rapid pace of the city's development, along with large sectoral settlements (military premises, universities, hospitals, etc.), produced a rather patchy, discontinuous city with poor connectivity. The issue is to fill urban blanks with greater density, reconnect the city through a denser, more hierarchical road network, and provide mobility services that meet the needs of a future city of 800,000 inhabitants in 2040.
- A will to keep and develop non-motorised mobility in a qualitative urban environment, along with developing public transport (BRT and restructured paratransit), with a distribution of modal shares between the two amounting to about 45% for NMT and 25% for public transport.
- A more intensive mobility of all inhabitants, still keeping wise in time and distances, as mobility rates increase from 2,3 to 3,1 between 2022 and 2040 (+38%), and the overall number of trips nearly doubles (+85%). Time spent on trips does not increase between 2022 and 2040, but distance rises by a fourth as mobility becomes more efficient.
- An inclusive mobility for all, allowing all segments of the public to move around with an affordable mobility system, whose prices increase proportionally to the travelled distance.
- A connected and integrated mobility system based on a BRT backbone and upgraded paratransit to deliver an efficient, qualitative, and user-centred service.

# Test scenarios and selected scenario

Three specific scenarios were defined to assess the impact of the SUMP, each with a different level of ambition.

- Scenario 1 presents a "business as usual" situation. The city grows in a scattered way, with no particular measures taken to densify its often loose urban pattern. However, urban spread is kept under control by the mountains surrounding the city. The street and road network is upgraded and developed. No mass transit supply is proposed, but paratransit is organised and upgraded.
- Scenario 2 features a compact city development with a trunk BRT system. A breakthrough solution for public transport is adopted: a BRT service on the Karakorum Highway, connected to other districts via bus feeders. Paratransit remains a first- and last-mile solution. The city grows compactly as city authorities care to plan and densify urban development, along with the upgrade, restructuring, and development of the road network
- Scenario 3 features also a compact city development with direct BRT services running in and out of the Karakorum highway BRT corridor to serve all main districts of the city. Paratransit remains a local and last-mile solution when needed. The city grows compactly as city authorities plan and densify urban development, along with upgrades, restructurings, and expansions of the road network.

Scenario 3 was selected by SUMP stakeholders as the basis for subsequent measure definition and selection. The measures selected and the expected impacts of scenario 3 are presented in the following sections.

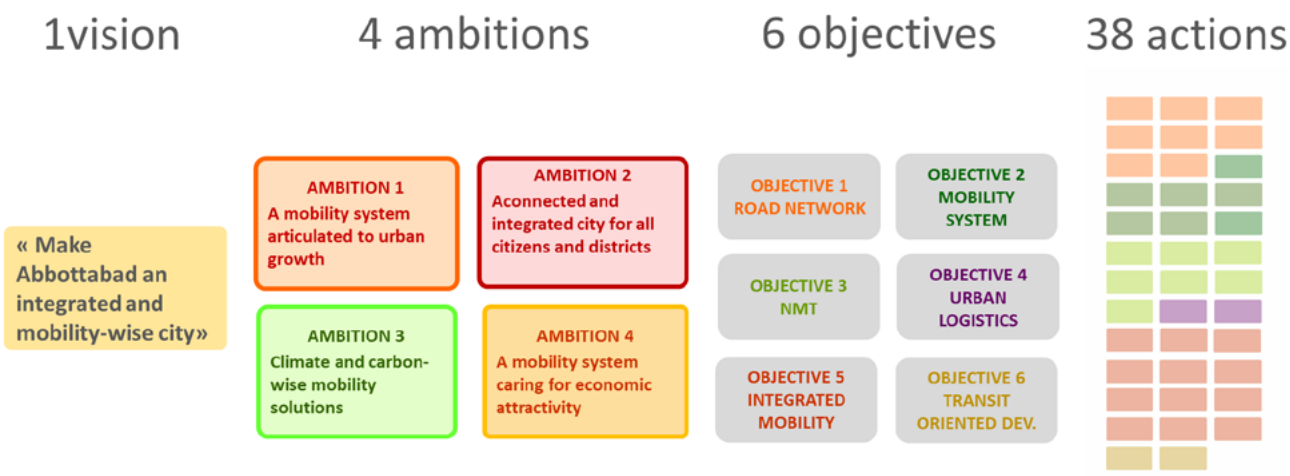


Figure 4 Scheme of Abbottabad SUMP's chosen scenario

# SUMP key measures and cost estimates

| Measures | Cost estimate (EUR) | Proposed financing source | Implementation schedule (year) |
|---|---|---|---|
| **Road Network** | | | |
| Main road projects | 29,636,000 | KP Province, Federal State, DFIs | 2026-2040 |
| Local street projects | 21,240,000 | KP Province, DFIs | 2026-2040 |
| Road design guidelines | 640,000 | KP Province | 2025-2026 |
| Road maintenance plan | 740,000 | KP Province | 2025-2026 |
| Traffic and mobility management | 427,500 | KP Province | 2026-2040 |
| Target road and crossroad network | 860,000 | KP Province, DFIs | 2025-2026 |
| Circulation plan | 627,500 | KP Province | 2026-2027 |
| Traffic management unit | 950,000 | KP Province | 2027-2028 |
| **Urban transit** | | | |
| BRT development | 304,593,750 | KP Province, Federal State, DFIs | 2026-2040 |
| Paratransit structuration | 3,000,000 | KP Province, DFIs | 2026-2035 |
| Transport hubs organisation | 337,500 | KP Province, DFIs | 2026-2035 |
| Paratransit quality of service | 812,500 | KP Province, DFIs | 2026-2040 |
| BRT development roadmap | 1,540,000 | | 2025-2026 |
| Paratransit transition roadmap | 1,140,000 | KP Province, DFIs | 2026-2027 |
| Paratransit drivers training | 1,537,500 | | 2026-2040 |
| **Non-Motorised Transport** | | | |
| NMT projects | 7,500,000 | KP Province, DFIs | 2028-2040 |
| NMT in transport and urban projects | 3,000,000 | | 2028-2040 |
| Bikes for Abbottabad | 150,000 | | 2026-2040 |
| NMT guidelines | 612,500 | | 2026-2027 |
| NMT development roadmap | 462,500 | | 2026-2027 |
| Pedestrian-centred approach | 787,500 | | 2026-2040 |
| Walking in Abbottabad | 450,000 | | 2026-2040 |
| **Urban Logistic** | | | |
| Urban logistics projects | 9,000,000 | KP Province, Private sector | 2026-2040 |
| Urban logistics roadmap | 650,000 | KP Province, DFIs | 2026-2027 |
| **Integrated mobility policy** | | | |
| Sustainable mobility planning process | 1,020,000 | | 2024-2040 |
| Mobility data management | 700,000 | | 2024-2040 |
| SUMP evaluation | 712,500 | KP Province, DFIs | 2024-2040 |
| Multimodal strategy | 480,000 | | 2024-2040 |
| Energy-wise mobility | 512,500 | | 2024-2040 |
| Demand management | 375,000 | | 2024-2040 |
| Transport Authority reinforcement | 910,000 | KP Province, DFIs | 2024-2040 |
| Integrated mobility financing | 540,000 | | 2024-2040 |
| Sustainable mobility project management | 675,000 | | 2024-2040 |
| Inclusive, green, gender aware mobility | 577,500 | | 2024-2040 |

| Measures | Cost estimate (EUR) | Proposed financing source | Implementation schedule (year) |
|---|---|---|---|
| **Transit Oriented Development** | | | |
| TOD projects opportunities | 4,500,000 | KP Province, Private sector | 2029-2040 |
| TOD guidelines | 312,500 | | 2027-2028 |
| TOD development roadmap | 275,000 | | 2027-2028 |
| **TOTAL COST (EUR)** | 402,862,250 | | |

# SUMP expected results and impact

| Impact area | Expected impact |
|---|---|
| **GHG emission (SDG 11)** | Yearly reduction of GHG emissions relative to 2022 (baseline year)<br>• 2026: 5%<br>• 2031: 20%<br>• 2040: 35% |
| **Accessibility (SDG 11)** | Percentage of the total population with access to public transport<br>• 2022 (baseline): 0% (no formal public transport)<br>• 2040: 45% (with the creation of the BRT line) |
| **Air pollution (SDG 11)** | Not quantified |
| **Modal share** | Percentage of total trips made with Public Transport<br>• 2022 (baseline): 16%<br>• 2026: 18%<br>• 2031: 22%<br>• 2040: 26% |
| **Road safety (SDG 3)** | Not quantified |
| **Expected institutional impact** | • Capacity development of KPUMA for SUMP implementation<br>• Creation of TransAbbottabad as BRT operator<br>• Capacity development of KP Province Departments |

# Insights from practice: lessons learned from the SUMP development process

## Lack of urban mobility agencies at the local level makes governance more complex

Governance is always a key issue in urban mobility, as competencies are often scattered across different departments and bodies and need to be brought together in a practical and positive way. The different departments of KP Province will need to cooperate to implement integrated mobility projects in Abbottabad, both horizontally (between sectors such as road construction, road maintenance, and traffic management) and vertically (between the provincial and local levels). The fact that the municipal level of government responsible for urban mobility is missing in the province will need to be compensated for by adequate city focus by KPUMA and the provincial administrations. To set a BRT project, an operator of the same type as TransPeshawar (TransAbbottabad) must be set, and it could even be a specific development of TransPeshawar.

The development of local involvement and empowerment at the city level in SUMP projects will need careful consideration by the regional/local subsidiaries of KP Province in Abbottabad, as there is currently no municipal authority in charge.

### City-wide road development needs to be boosted to enhance the quality of life

Abbottabad is still a city in the making, with significant population growth ahead and an urban fabric that encompasses large educational, health, and military facilities, along with various types of residential areas. These areas are often disconnected from one another, and moving between them requires passing through a limited number of congested roads. Delivering a more integrated and balanced road network is needed and is a key issue for improving mobility throughout the city. Existing roads are upgraded and eventually brought to higher standards, and new roads are created to fill gaps in the existing urban network or to serve developing urban areas. These roads will facilitate all mobility and are especially required to allow direct BRT access to and from its dedicated corridor (Karakorum Highway, Murree Road) to serve the population at the closest level. NMT will be prioritised in the road layout to integrate all possible road uses smoothly.

### There are opportunities to link land use and urban mobility planning

Urban development will have to be closely associated with mobility development. The BRT project will provide good opportunities for transit-oriented development around its key stations. More broadly, the city has low density, and increasing it would make sense, as it would lead to a more robust road network and a much more efficient public transport supply (BRT).

## Perspectives for implementation

### The provincial entity KPUMA can lead SUMP implementation through a mobility committee

As an institutional body, the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA) is responsible for planning and monitoring transport and mobility projects across KP Province cities, covering both transport infrastructure investments and maintenance, as well as transport service investments and operations.

KPUMA could naturally coordinate SUMP implementation and will associate within a Mobility Committee all KP Province Departments competent in the field of transport, namely C&W, KPHA, TPU, etc. The Mobility Committee will discuss SUMP projects that intersect with the competencies of these departments.

The Mobility Committee is an operational solution that enables integrated work within the current institutional setup of KP Province. Open discussions are held within it to review each Department's investment priorities in a concerted manner aligned with SUMP priorities. Efficient collaboration is rooted in members' good awareness of the SUMP objectives and measures, as well as strong political support from the KP Province. Capacity-building and workshops can help overcome technical barriers between KP Province Departments.

### Abbottabad BRT project is possible if technical and governance issues are solved

The development of the BRT requires the creation of a BRT operator called TransAbbottabad. It will be defined on the same basis as TransPeshawar and may be a new development of TransPeshawar to leverage its operational experience.

The concept design developed through the SUMP for the Abbottabad BRT presents a clear opportunity to implement such a mass transit service, but also highlights some constraints. Besides the alignment constraints common to any BRT project, a key aspect is the BRT's capacity

to run in and out of the BRT corridors (Karakorum Highway in phase 1, complemented by Murree Road in phase 2). This ability to run direct services requires communication between the BRT corridor and the rest of the road network, which can sometimes be difficult to implement. The feasibility study will help clarify these aspects.

### Abbottabad's BRT project requires international support to be funded and implemented

The BRT project will rely on both national and international funding, and its business model will need to be carefully analysed, considering different options to deliver the best value for money and value for citizens.

Conducting the paratransit transition will require time and effort to engage drivers and vehicle owners. Proposing rolling stock renewal under good financial conditions and setting a sound business model for the industry as a full dimension of the mobility system will be helpful. Negotiations will have to be carefully conducted for that.

## Progress on SUMP implementation

### SUMP preparation phase (2024-2025)

The SUMP preparation phase focused on the overall organisation and preparation for SUMP implementation by the SUMP technical taskforce embedded in KPUMA: planning activities, setting a roadmap, securing financial contributions, securing decision-making, etc.

Key operational guiding documents to frame the overall SUMP activities and investments across key mobility topics were elaborated, including the Target Road Network, Circulation Plan, and BRT Development Roadmap. Some key documents are left for later (e.g., the circulation plan). Tender preparation, consultant selection, follow-up, contributions, and validation are among the main steps in these activities.

The Priority SUMP Short-term Program 2025-2029 is prepared in accordance with roadmaps drawn from strategic documents.

Adequate training in sustainable mobility management was provided to the SUMP task force to fulfil its missions.

### SUMP short-term program 2025-2029

**Road network:**

12 road projects are being implemented, with a focus on urbanised areas and missing links. Road upgrades and targeted road development are carried out to provide denser coverage and better connections. Micro road projects at the neighbourhood level are carried out through upgrades (60 km) and developments (30 km). Road design guidelines are established alongside a Circulation Plan. A traffic management unit is created to improve flow regulation and coordinate with road maintenance.

**Bus Rapid Transit**

Building upon the 'concept design' elaborated through the SUMP and BRT design studies, BRT works are being implemented for BRT phase 1 (Karakorum Highway). The transition of the paratransit sector began with the definition of a Paratransit Transition Roadmap, the implementation of a Quality of Service certification, and a wide-ranging driver training campaign. Support for vehicle upgrades is provided as an incentive for better service. Services are reorganised along the BRT development on the Karakorum highway.

**Active mobility**

A non-motorised transport (NMT) Development Roadmap is carried out to define the scope and priorities. The first set of micro-NMT projects on focused areas/neighbourhoods has been implemented. NMT dimension in road or public transport projects is carefully scrutinised for action. The pedestrian-centred approach allows capitalising on understanding and developing training for professionals. Two actions are undertaken to reach the wider public and spread and support NMT. "Bikes for Abbottabad" delivers bikes at low cost to promote the habit and build visibility and understanding. Walking in Abbottabad continues to attract walkers for the same reasons.

**Urban logistics and regional integration**

An Urban Logistic Development Plan defines scope and priorities. A pilot action is undertaken in the Cantonment area to test micro-urban logistics improvements and traffic calming in commercial areas.

A Multimodal strategy is set to coordinate the development of the different modes. A wide array of transversal actions is taken to prepare, follow up on, support, and appraise the implementation of SUMP projects: SUMP planning and financing, SUMP evaluation, data management, etc. Training on sustainable mobility project management continues for the SUMP team and associated stakeholders. Transversal dimensions are also addressed, including energy-wise solutions, inclusion, and environmental aspects. Awareness-raising measures are taken for the latter.

# Mingora (Swat District), Pakistan

Sustainable Urban Mobility Plan — Completed

## Basic information

| | | |
|---|---|---|
| Urban area | → | 5,337 km² (district scale) |
| Population | → | 2,309,570 (district scale) |
| Growth rate | → | 1.5% |
| The largest city of the Swat District (Khyber Pakhtunkhwa province) | | |
| **Modal share** | | |
| Public transport | → | 25% |
| Walking | → | 58% |
| Private motorised modes | → | 17% |
| National GHG emissions per capita | → | 1.99 (tCO2eq) |
| Exposure to climate change | → | HIGH |

## Context

Mingora is the largest city and commercial centre of the Swat district, while Saidu Sharif is Swat's administrative capital. Mingora is located on the Swat Riverside, north of Saidu Sharif. This district is part of the Malakand division of the Khyber Pakhtunkhwa province of Pakistan. It is renowned for its natural beauty and is a well-known tourist centre. The N-45 and N-95 highways connect Mingora to Peshawar and Islamabad via Mardan. Locally, the administration is run by the Deputy Commissioner. Tehsil Municipal Administration is responsible for urban transport, and the Regional Transport Authority regulates private vehicles.

Mingora suffers from inadequate road capacity (including infrastructure facilities such as flyovers and underpasses) due to the high traffic growth rate and rising private vehicle ownership. Road safety is a major issue due to a lack of proper traffic control devices (such as signs, signals, and markings) and little enforcement of regulations by traffic wardens. There is currently no master plan for transportation and land use available.

The local Counterpart, the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA), has the mandate and responsibility to finance mass public transport infrastructure. However, it lacks the capacity to borrow from international financial sources. Some systems and procedures are partially in place to monitor, evaluate, and report on urban issues.

The SUMP elaboration aims to provide a comprehensive sustainable mobility plan at the urban scale and to propose a conceptual design for priority projects to be identified in the SUMP.

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost estimate (EUR) |
|---|---|
| Swat River Walkway (concept design) | 7,500,000 |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

| Urban transport investment measures | CAPEX Estimate (EUR) |
|---|---|
| Road network | 48,400,000 |
| Urban transit | 86,100,000 |
| Non-Motorized Transport (NMT) | 15,800,000 |
| Urban logistics | 9,000,000 |
| Transit Oriented Development (TOD) | 4,500,000 |
| TOTAL | 163,800,000 |

# Projected impacts

| Indicator | BAU 2022 | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|---|
| | | Scattered city and restructured paratransit | Compact city bus network | Decongested city bus network |
| **Total annual GHG emissions (Mt CO2eq)** | 72,080 tCO2eq | 72,080 tCO2eq | 41,370 tCO2eq | 41,680 tCO2eq |
| **Annual transport-related GHG emissions per capita (kg CO2eq)** | 0.0537 tCO2eq/ capita | 0.115 tCO2eq/ capita | 0.066 tCO2eq/ capita | 0.067 tCO2eq/ capita |
| **Trips Daily Average Total generated trips** | 915,300 | 1,394,100 | 1,393,100 | 1,394,900 |
| **Modal share Related to the carbon footprint** | Motorcycle: 20%<br>Car: 25%<br>Paratransit: 55% | Motorcycle: 20%<br>Car: 35%<br>Paratransit: 45% | Motorcycle: 25%<br>Car: 50%<br>Paratransit: 17%<br>Bus: 7% | Motorcycle: 25%<br>Car: 50%<br>Paratransit: 17%<br>Bus: 7% |

# Insights from practice: lessons learned from the SUMP process

## Fragmented institutionality jeopardises the SUMP process

The institutional framework of the transport sector in the Khyber Pakhtunkhwa province presents significant challenges linked to siloed operations and overlapping responsibilities. These issues highlight the need for clearer mandates, capacity building, and enhanced coordination mechanisms to streamline the SUMP process.

# Finance leverage

## Leveraged financing (resulting or enabled by the SUMP preparation process in the three cities)

| Description | Type | Source | Status | Amount (EUR) |
|---|---|---|---|---|
| Peshawar Sustainable Bus Rapid Transit Corridor Project (Phase 1)[3] | Loan | AFD | Secured | 120,000,000 |
| Peshawar Ring Road construction of the northern section of the ring (missing link) from Warsak Road to Nasir Bagh Road[4] | Budget allocation | Provincial Government of Khyber Pakhtunkhwa | Secured | 27,300,000 |
| Peshawar BRT (Phase 2)[5] | Budget allocation | Provincial Government of Khyber Pakhtunkhwa | Secured | 54,000,000 |
| Design for Traffic Management System & Construction of Flyovers / Underpasses or alternate Roads / Bypass in Mingora City[6] | Budget allocation | Government of Khyber Pakhtunkhwa (local public funds) | Secured | 30,320 |

[3] https://www.adb.org/projects/48289-002/main#project-pds
[4] https://www.thenews.com.pk/print/1317076-kp-begins-work-on-delayed-peshawar-ring-road-missing-link
[5] https://autopower.com.pk/peshawar-brt-phase-2-approved-ring-road-dalazak-expansion
[6] https://www.pakp.gov.pk/wp-content/uploads/2025/06/el-DFG-Part-L-Development-Settled.pdf

# Perspectives for implementation

## Urban mobility has positioned higher in the local political agenda

The SUMP's administrative approval has been secured, and the process to obtain political approval is underway. After completing the three SUMPs in the Khyber Pakhtunkhwa province, public transport is recognised as a priority, and additional feasibility studies are expected to be conducted at the provincial scale. The city is expected to draw further inspiration from the SUMP's strategic directions, including the implementation of green corridors.

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