



STRATEGY 2019 -2023

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A connected Afghanistan that plays a fundamental
role in regional transport through a Sustainable
Road Network

Quick Facts about Ministry of Public Works



The Strategic Road Network (SRN)

Ministry of Public Works' Main Responsibilities

- Development
- Operation
- Maintenance

- Total 25,907 KM
 - Existing Length 19,327 KM
 - Ongoing 2,310 KM
 - Pipeline 273 KM
 - Planned 3,997 KM
-

PRESIDENT'S MESSAGE

A Message from H.E. the President of Islamic Republic of Afghanistan

Asia's economic rise is one of the most successful stories of economic development in recent times. The 21st century history will be remembered by Asia's transformation into the economic powerhouse of the world.

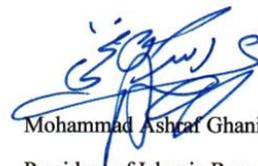
The rising prominence of Asia as a global economic power is not by chance; it is rather influenced by geography, availability of resources, an increasingly growing young population and most importantly its aspirations for regional connectivity. An important focus for Asia has been to strengthen the region's potential to progress and its capacity to manage the attendant risks associated with a more challenging global environment.

Afghanistan is firmly anchored in Asia's heartland with promising potential to connect Central Asia to South Asia and East Asia to the Middle East. The centuries old Silk Road that passed through the country, carried more than just merchandise and precious commodities, the trade and transit also facilitated the movement and mixing of populations that brought about the transmission of knowledge, ideas, cultures and beliefs, with a profound impact on the history and civilizations of the world.

The devastating conflicts and wars in recent history of central and south east Asia, especially that of Afghanistan's, have limited and impaired the region's potential ability to flourish. Mitigating for such risks in the future can only be envisioned through regional cooperation and interlocking economic interests. Investing in sustainable transport infrastructure network can ensure economic connectivity leading to regional peace and prosperity

When road network connects communities, the scale of change becomes irreversible. Each connection produces a combined developmental impact that can lift people from poverty to prosperity.

To that aim, the Government of Islamic Republic of Afghanistan, with the support of its international partners, remains committed to transport infrastructure development with a vision to achieve regional peace and stability through connectivity.



Mohammad Ashraf Ghani

President of Islamic Republic of Afghanistan

FOREWORD

In 2016, the Government of Islamic Republic of Afghanistan (GoIRA) announced the Afghanistan National Peace and Development Framework (ANPDF) 2017 to 2021. The overall vision of ANPDF is to achieve self-reliance and improve the welfare of the people of Afghanistan. Its main goal is to reduce poverty and improve people's welfare, while other goals include building the legitimacy and effectiveness of the state and achieving sustainable job creation and progress toward the Sustainable Development Goals.

The ANPDF was followed by the National Infrastructure Plan 2017-2021 (NIP). The NIP and associated investment pipeline for 2017-2021 focused on efficient planning, delivery and operation of infrastructure at the national and sector levels, which will improve performance and deliver services with improved efficiency, productivity and competitiveness. The NIP supports ANPDF's vision as these priority infrastructure investments, combined with human capital development and enhanced regional connectivity, provide the essential building blocks for Afghanistan's future economic growth, employment and social development. These documents were closely followed by the National Priority Programs (NPPs), and Transport Sector Master Plan 2017-2036.

These strategic documents agreed that integrated transport network infrastructure investments, that are systematically planned and implemented, focused on facilitating the country's economic growth and development; will expand access to domestic, regional, and international markets and social

services, increasing employment, and spurring trade, transit and logistics. Delivering efficient transport infrastructure will overcome Afghanistan's connectivity challenges. It will connect Afghanistan and its people with jobs, goods and markets in the region and beyond. The backbone of the transport network in Afghanistan is the road sector that plays an important part in achieving connectivity and integration.

The ANPDF 2017-2021, NIP 2017-2021, NPPs as well as the Transport Sector Masterplan, guide the Ministry of Public Works (MPW) to undertake a major body of work in regards to transport infrastructure development.

To that aim, the MPW in line with these strategic documents has developed the MPW strategy 2019-23 that will mainly focus on ensuring road sector investment, improving road networks access and coverage, and enhancing road safety. The 1st and 3rd pillar of the document illustrates the plans and objectives of the ministry with respect to institutional reforms and capacity building, and road safety, whereas, the 2nd pillar illustrates the plans and objectives of the ministry with respect to road networks planning and development. That is the planning and development of Afghanistan's primary, secondary, and tertiary road networks.

In so doing, the MPW is undergoing key reforms, which entail changes in functional entities, human resources development, policy and planning, project development and implementation, prioritization and utilization of budget, procurement and the fight against corruption. These adjustments are essential to

the future of the Ministry and the sector as a whole. It is imperative that the Ministry integrates various functions, parallel structures and cultures into a single entity with appropriate hierarchical reporting lines resulting in streamlined service delivery.

The Ministry is committed to Zero Harm Vision for the public sector. The Ministry reaffirms its commitment to employees' continuous capacity and professional development and to ensure that risks are, as far as reasonably practicable, eliminated or controlled. Every effort will be made to ensure that safety management systems and safe work practices are in place, so that the Ministry's duties and responsibilities are conducted in a manner that is safe for its employees and the community.

As the Minister of Public Works, it is my desire to leave a legacy of sustainable road network for the people of Afghanistan. My expectation is that the Ministry will have a clear focus on timely and quality service delivery that our people deserve. Through this strategy, the Ministry will focus on initiatives to improve connectivity, safety, efficiency, and sustainability in Afghanistan's road sector, to enable the country to reach its national target by 2021. With the current and new initiatives, the Ministry is looking forward to a future where challenges give rise to opportunities.

Yama Yari
 Minister of Public Works
 Islamic Republic of Afghanistan

ABBREVIATIONS & ACRONYMS

ADB	Asian Development Bank
AITF	Afghanistan Infrastructure Trust Fund
ANCL	Afghanistan National Construction Laboratory
ANPDF	Afghanistan National Peace and Development Framework
CDC	Community Development Council
CIB	Capacity and Institution Building
DBST	Double Bituminous Surface Treatment
DFID	Department for International Development
GIRoA	Government of the Islamic Republic of Afghanistan
GIS	Geographic Information System
KAC	Keep Afghans Connected
MIS	Management Information System
MoE	Ministry of Education
MoF	Ministry of Finance
MoI	Ministry of Interior
MPW	Ministry of Public Works
NIP	National Infrastructure Plan
NPP	National Priority Program
NRAP	National Rural Access Program
O&M	Operation and Maintenance
PASER	Pavement Surface Evaluation and Rating
PPP	Public Private Partnership
RAIP	Rural Access Improvement Program
RAMS	Roadway Asset Management System
RAMP	Roadway Asset Management Project
RFU	Road Fund Unit
RSSP	Road Sector Sustainability Program
SOE	State Owned Enterprise
SRN	Strategic Road Network
TCHRP	Trans Hindukush Road Connectivity Project
USAID	United States Agency for International Development
WB	World Bank



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EXECUTIVE SUMMARY

Afghanistan provides access to trade along north-south and east-west Asian corridors, through Central Asia. As the “geographic center of gravity”, the country has the potential to play a special role in the Central Asia Regional Economic Cooperation (CAREC) Program, which supports investments in roads, energy, and trade. Of the six identified CAREC Corridors, three traverse Afghanistan. Roads and rail links connect Afghanistan to the outside world and can connect Asia’s four different regions to each other. Internally, roads predominantly connect Afghanistan’s provinces, cities, towns, and villages.

Since 2002, Afghanistan’s road network has been expanding rapidly. The expansion brought about improvements in travel times and transport costs. However, substantial work remains to maintain and fully develop the road network. Additionally, with the increased size of the network and increased demand for roads, MPW faces new challenges to adequately operate and maintain it.

Following an analysis of the existing situation, MPW identified different challenges that the strategic road network (SRN) faces. These include weak road development, financing for operations and maintenance (O&M) and institutional capacity challenges. MPW recognizes that the existing structure and systems is outdated. Further, the inadequacy of the regulatory framework and human resource capacities, undermine the prospect of road sector sustainability.

The Ministry also identified key challenges related to the physical condition of the network. These included connectivity and access shortcomings, congestion, and lack of maintenance, which created road maintenance and rehabilitation backlog that severely undermine the sustainability of the sector.

To overcome these challenges, and in line with the overall goals of Afghanistan National Peace and Development Framework (ANPDF) 2017-2021, MPW defined its vision by focusing on regional integration and sustainability. “Connecting Afghanistan with the Region through a Sustainable Road Network” embodies the overall vision for the next five years. the Ministry will work towards achieving this vision by:

- Ensuring Sustainable Road Investment
- Improving Road Network Access and Coverage
- Enhancing Road Safety

To ensure the sustainability of road investments, the Ministry defines strategies and interventions covering road sector financing and sustainable institutional capacity building.

To ensure financial sustainability, MPW is developing initiatives to formulate effective policies related to road fees and taxes to be supplemented with implementation initiatives. To increase the sector’s funding envelop, MPW developed an initiative specifically geared towards establishing potential partnerships with the private sector in developing, maintaining and operating the road infrastructure.

Further, realizing the need to earmark funds for road development and O&M, the Ministry will work with the Ministry of Finance (MoF) to establish the Road Fund Unit (RFU) within the MoF.

To move the ministry from its current state of outdated structure and systems, MPW has identified several initiatives to develop the regulatory framework, finalize its structure, build specialized technical and support systems, improve the work environment, in addition to adequate provisions for human resource capacity building and continued professional development.



Understanding the extent of the challenges facing the physical condition of the network and its efficiency, MPW developed strategies and initiatives to enhance international, national and sub-national connectivity and access. This includes the construction and upgrade of essential roads to complete the network, thereby, enhancing its connectivity and reducing congestion at the major bottlenecks. Additionally, it developed initiatives to overcome the rehabilitation backlog that is undermining the efficiency of the network at the national, provincial and district levels.



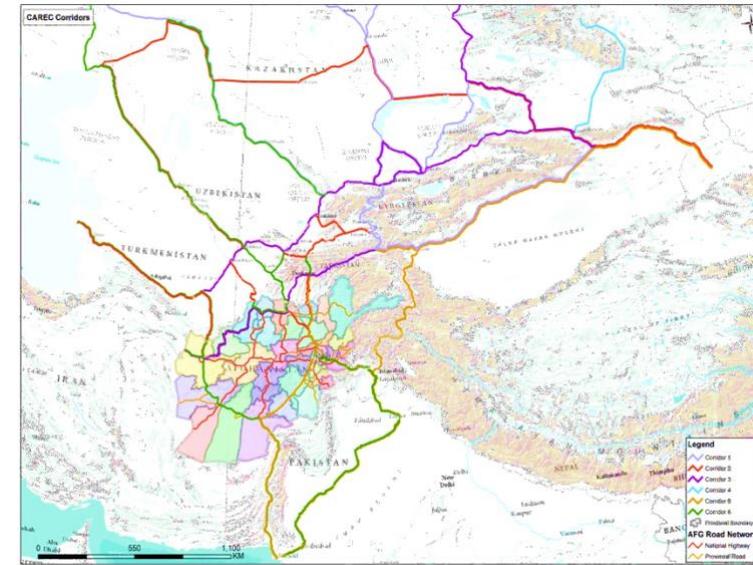
Realizing the need for sustainable road maintenance, MPW also developed initiatives and interventions to ensure eraser of the maintenance backlog and the timely maintenance of all of its roads. These initiatives address maintenance for all road classes for both paved and unpaved roads, in addition to road structures.

To address a long ignored important measurement of the quality of the network, MPW introduced key provisions related to road safety. The initiatives defined by MPW include a road safety audit and programs for road safety mitigating measures. Additionally, recognizing the multi-disciplinary nature of road safety, MPW proposed initiatives to enhance vehicular mechanical inspections, enforcement and public awareness.

Given the magnitude of challenges faced by the road sector in Afghanistan, MPW 2019-2023 strategy will require about \$ 4.13 billion over the next five years. Most of this will be invested towards developing the road network and establishing a sustainable road maintenance regime that will adequately maintain the SRN over the next five years.

The challenges are great and the opportunities that exist are even greater. As MPW takes full ownership of the road sector, it recognizes the value of the support of the international development partners, which has sustained the road sector in Afghanistan. A large part of this strategy is already financed by the different partners through ongoing and pipeline strategic projects. While MPW will seek additional support from development partners, the Ministry is committed to increasing the government's financial allocations to the sector to ensure the realization of this strategy by 2023.

“For 200 years, our location has been a disadvantage. In the next 20 years, it's going to become solid gold. All roads between South Asia



and Central Asia can only lead through us. We can become the transfer point with East Asia”.

H.E. President Ashraf Ghani

INTRODUCTION

Afghanistan is a landlocked country with an estimated population of over 35 million dispersed across the largely mountainous terrain of 652,000 square kilometers without many viable alternative transport modes. Roads are the principal means of transport serving 90 percent of Afghanistan's travel demand.



The international donor community has invested over four billion dollars in rebuilding and expanding Afghanistan's road network by over 9,200 km since 2002. These investments were vital in reducing travel time by as much as 75 percent and transport costs by up to 40 percent.

During the same period, it was also observed that there was an average annual increase of 14 percent in vehicle ownership from 2002 to mid-2014, reaching over 1.83 million vehicles from 177,000. Freight traffic also rose from over 18,000 million ton-km in 2007 to over 25,000 million ton-km in

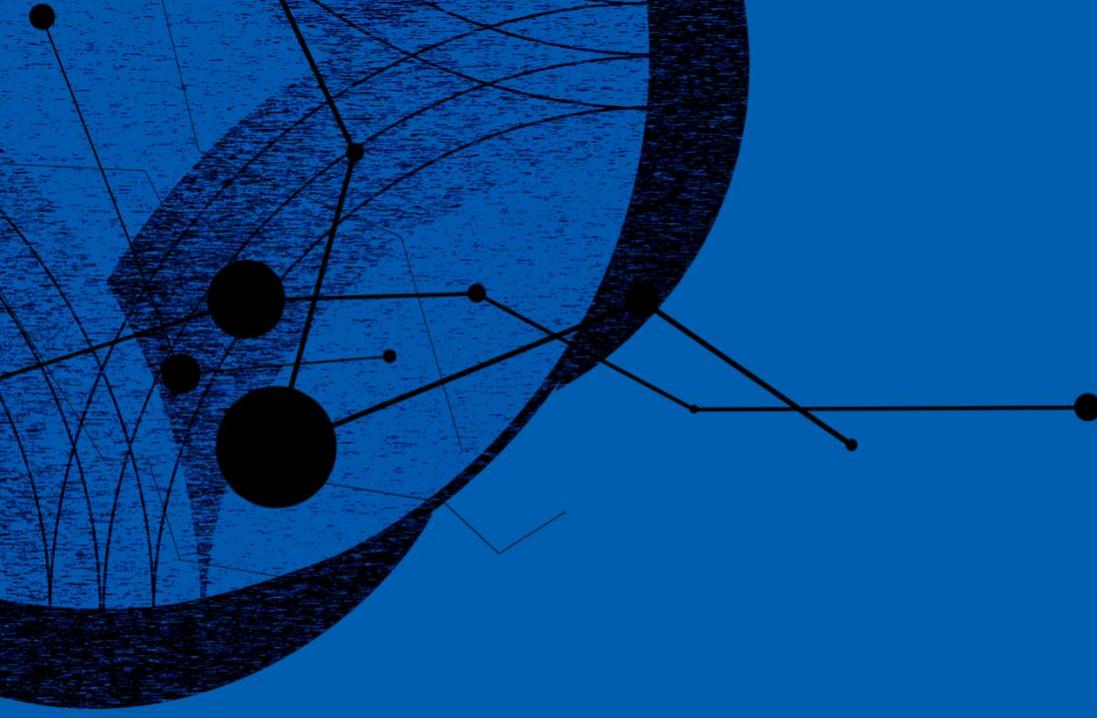
2014. Freight is carried mainly in private trucks since rail transport is rather new and limited, and air transport is too expensive.

Despite the expanding network, road infrastructure remains underdeveloped. A significant portion of the Strategic Road Network (SRN) is unpaved with major road links, essential for economic development, remain undeveloped. In addition, with the expansion of the network and the growing demand, new challenges came to bear. Lack of maintenance has reduced serviceability for a majority of roads and the requirement to manage the network became more demanding.

In response to the rise of new challenges and the need to ensure sustainability, the Government of Islamic Republic of Afghanistan (GoIRA) is determined, and the donor community is committed to support MPW in developing its institutional capacity to address the road development and maintenance challenges.

Throughout the years, the government, supported by the donor community, had financed several projects. However, these projects were not very successful in institutionalizing the needed capacity within MPW. There are different reasons for such unfortunate results, yet, MPW believes that lack of strategic direction and a holistic view to institutional development were main reasons. Acknowledging its past shortcomings, the current leadership of the Ministry is committed to transforming the organization and to deliver meaningful change.

As a part of its ongoing reform efforts, the 2019-2023 MPW Strategy was developed following a substantive assessment of the existing conditions, both of the ministry and the SRN. MPW has defined its goals, strategies and interventions to meet the needs to develop and maintain the road network in a sustainable manner, thereby, providing a cost-effective quality road service that the people of Afghanistan need, in line with the national development goals.



Current Condition

- Existing Road Condition
- The Strategic Road Network (SRN)
 - National Highways & International Connections
 - Provincial Roads
 - District Roads
- Institutional Capacity of MPW
- Road Safety
- Road Sector Financing
- Summary of Existing Conditions

EXISTING ROAD CONDITIONS

Afghanistan's economic development rests, to a great extent, on its ability to leverage its geographic position in central Asia. Through its road network, Afghanistan is a major hub and route for regional and international trade corridors.

Without a well-developed road network that adequately connects the country with its neighboring states, and efficient National Highways traversing the country, it is challenging for Afghanistan to become a major player in the regional and international trade routes.

Further, as development in Afghanistan occurs under national security and conflict conditions, many of our districts remain without access to basic services. These conditions of conflict further impact the government's ability to sufficiently finance national development, including the requirements of the road sector.

SRN length* by road class by road surface type by status (km)

Road Class	Existing Length (km)			Ongoing/pipeline/planned (km)			Total (km)
	Asphalt	Gravel	Earthen	Ongoing	Pipeline	Planned	
National Highways	4,598	2,042	214	1,126	117	1,796	9,893
Provincial Roads	813	464	117	208	-	162	1,764
District Roads	2,482	7,853	744	976	156	2,039	14,250
Total (km)	7,893	10,359	1,075	2,310	273	3,997	25,907

*Note: The length of the National Highways, Provincial Roads, and District Roads are based on NRAP 2018 survey. Pipeline projects include those under procurement processes, while planned include those projects which are currently planned, under design, and under feasibility study.

The following are the results of the analysis of the existing conditions, which were based on a Strength, Weakness, Opportunity and Threat (SWOT) analysis. The summary of the results of the SWOT analysis are included in Annex I.

The Strategic Road Network (SRN)

The Ministry of Public Works (MPW) is responsible for the development, and Operation and Maintenance (O&M) of the SRN. The network provides national and international connectivity through the National Highways, and subnational level connectivity through the provincial and district roads. It has a total estimated length of 19,327 km. Table below illustrates the breakdown of the road lengths by road class by surface type.

National Highways & International Connections

The National Highways, including the international

connections, cover a length of about 6,854 km.



Additionally, there are 1,126 km of ongoing construction and upgrade projects on the National Highways and 1,243 km in different stages of procurement and development. Further, there are an estimated 1,796 km of planned roads that would complete that National Highways as per the master plan.

The backbone of the National Highways is the 2,210 km Ring Road which traverses the country along two primary corridors from Kabul in the east to Herat in the west.

The northern part of the Ring Road corridor runs through the main cities in the northern part of the country from Kabul to Herat via Mazar-e-Sharif. In addition to connecting the main cities in northern Afghanistan, National Highway extensions of this corridor provide international connections with Tajikistan, Uzbekistan and Turkmenistan to the north of Afghanistan, and to Iran on the western part of the country. Additionally, the route falls

along the major trade corridors from China in the north to Pakistan in the south and onto the Persian Gulf and west Asia.

The southern part of the Ring Road corridor extends from Kabul to Herat via Kandahar and other major cities in the southern part of the country. The southern part of the corridor has essential international highway extensions connecting Pakistan in the east, through Jalalabad, and in the south and southeast through Khost, Paktika and Kandahar. In addition, the road serves the international connection with Iran in the southwest and west through Nimroz and Farah.

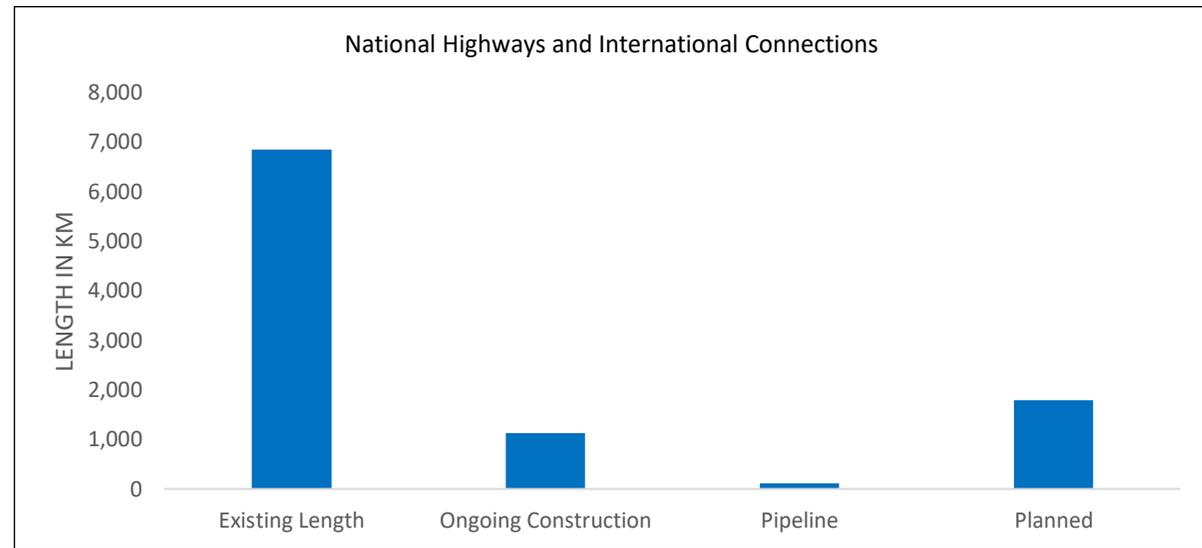
The main challenges undermining the efficiency of the National Highways and their international extensions include weak connectivity or access, congestion bottlenecks and rapid deterioration of road conditions.

The Main Challenges of National Highways

Connectivity

Almost 30 percent of the National Highways are ongoing, in the pipeline, gravel or planned projects. This illustrates the connectivity challenges, and its impact on efficiency. In addition to the need to upgrade all these roads, the following are specific connectivity shortcomings impacting the existing network:

An incomplete Ring Road: The northern part of the Ring Road corridor is not yet completed. The northwestern part remains under construction substantially reducing the efficiency of the network



and increasing travel times and delays. The completion of Afghanistan Ring Road is a high priority for the National Unity Government.

Inefficient Network Planning: The Ring Road itself does not cover the entire country. Travel distance from Kabul to Herat along the Ring Road is about 25 percent longer than the direct route between the two cities via Bamyan & Ghor provinces. Similarly, along the north-south directions, the increase in travel distance is more than 25 percent along the Ring Road than under more direct routes such as Mazar-e-Sharif to Kandahar via Bamyan. This results in substantial travel time and cost increases along the network, especially at a time with increased importance of the country as a regional trade corridor and hub.

Inadequacy to Support Trade: Trade moving along the eastern borders with Pakistan through Jalalabad towards Kabul is severely hindered due to the existing low capacity road, which cannot be expanded due to natural constraints. This increases delays and reduces the efficiency along this essential trade route.

Inadequate provisions of service facilities: Along national highways, especially along international trade corridor, there are no provision of rest areas, which are essential to commercial traffic, in ensuring safety and efficiency of trade movements.

Congestion

The Ring Road was intended to connect major urban centers. To a large extent, the Ring Road has achieved this important objective. However, given

the expansion of built-up areas and the increased traffic volumes within many of these growing centers, National Highways passing through some of the cities are currently experiencing severe congestions. In addition, through moving traffic, especially freight vehicles, face substantial delays within these centers, thus reducing the efficiency of trade movement. Kabul and Herat present such examples of heavy congestion due to through traffic, which includes large trucks.

The Salang Tunnel, in Parwan Province to the north of Kabul, was built in 1960s; and is a major bottleneck for all north-south moving traffic with extensive delays, in addition to maintenance and operation costs. These bottlenecks along the National Highways have large impact on the efficiency of the SRN, and hinder trade and economic development substantially.



Deterioration of the National Highways

Lack of proper road operation and maintenance in many parts of the National Highways, and, sometimes, the poor construction quality, resulted in severe deterioration of many of

the road sections on the National Highways. Today, an estimated 14 percent (about 930 km) of the paved portions of the National highways are in dire need for reconstruction.

In addition, poor mechanisms of routine maintenance accelerate deterioration along the network, which will necessitate elevated intervention into periodic maintenance category. Currently, it is estimated that 30 percent, or about 2,050 km, of the National Highways require some level of periodic maintenance.

Deterioration of the Kabul-Kandahar Highway

The Kabul-Kandahar Highway is about 450 km long major highway along the southern part of the Ring Road Corridor. It was rehabilitated in 2006 by USAID. The lack of maintenance on the highway resulted in its partial deterioration. Additionally, the highway has 41 bridges, of which eight bridges require immediate rehabilitation mostly due to explosions and enemy sabotage.

While, maintenance is essential for the sustainability of the road network, in many cases, inadequate design, quality of construction or substandard material causes quicker deteriorations. Quality assurance and control of design and construction are also major challenges that will be addressed through implementation of this strategy. Further, security is challenging, and sabotage to road structures creates notable safety issues and major traffic delays and inefficiencies.

Provincial Roads

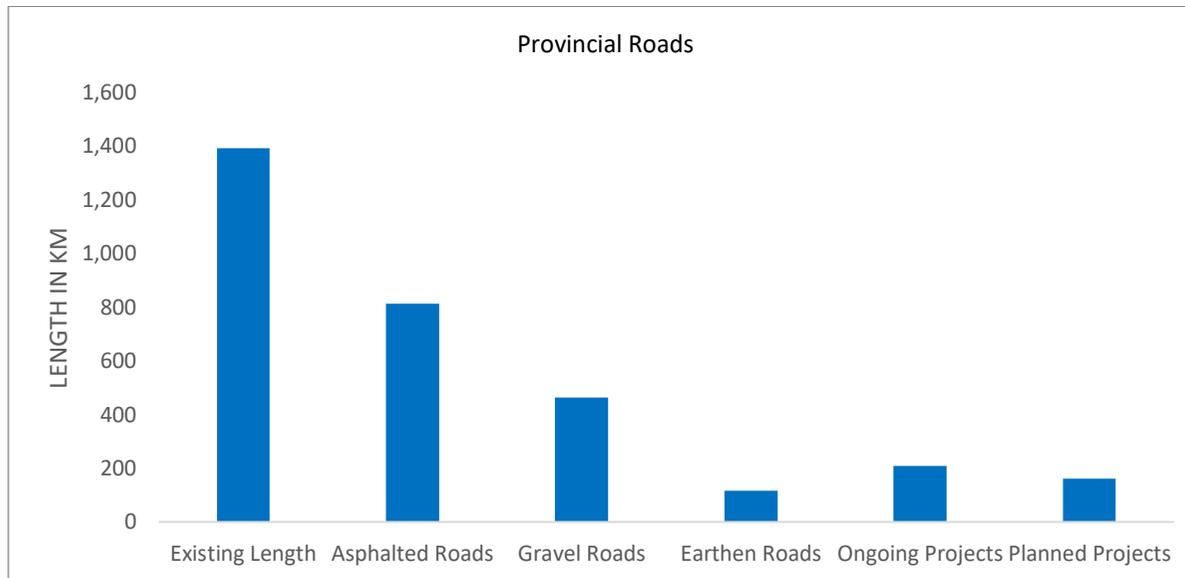
Provincial Roads are the second level of road hierarchy in Afghanistan that complement the National Highways. They connect different

provinces at the subnational level and provide connections for the district level roads to the National Highways. Provincial Roads enhance the overall efficiency of the SRN and has immense economic and development impact.

The total length of the Provincial Roads in the country is estimated at 1,394 km. Of these, a total of about 813 km are asphalt and 464 km gravel, in addition to about 117 km earthen. Further, there are 208 km of ongoing projects and 162 km of planned provincial roads.

The main challenges facing Provincial Roads include: weak access arising from lack of available paved roads in certain provinces, such as in the province of Nuristan, and/or due to the type of road surface. In addition, maintenance of the paved Provincial Roads was below the adequate requirement, which caused about 20 percent of these roads, or about 280 km, to deteriorated at faster rate and require reconstruction. Similarly, delayed maintenance creates a backlog of periodic maintenance, with almost 45 percent, or about 615 km of paved Provincial Roads require periodic maintenance.

Congestion along provincial roads is minimal and for the most part is associated with weak connectivity to the National Highways. Addressing the shortcomings of National Highway connectivity will also address congestion issues along the provincial roads.



District Roads

Administratively, Afghanistan is divided into 34 provinces and 365 districts. It has 10 cities with a population exceeding 100,000 inhabitants, and less than 60 cities over 10,000 inhabitants. Majority of people live in smaller rural communities.

The District Roads play a major role in the development of many rural communities. Given the vast population dispersion in the country, District Roads make up the major portion of the SRN with an estimated total length of 11,079 km, accounting for about 57 percent of the SRN.

Although many of these roads are low-volume roads, about 2,743 km, or 25 percent, of the

District Roads are paved. The remaining 75 percent are gravel or dirt roads. Additionally, there are some districts that have no access to any roads, which limit their access to basic needs such as hospital, school, and markets. The provisions of basic access to these districts cures inequality challenges to some extent.

Aside from lack of basic access due to lack of roads; most gravel roads in the country are unsustainable. This rendered many of the gravel district roads in poor conditions. Lack of maintenance along paved district roads has also contributed to deterioration of these substantial roads. About 5 percent, or 685 km, of paved district roads require rehabilitation, and an additional 50 percent need periodic maintenance.

Institutional Capacity of MPW

MPW is undergoing a major reforms process. The reforms commenced with development of an organizational structure aimed at enhancing efficiency and effectiveness of operations, in addition to establishing adequate controls for accountability through a comprehensive anti-corruption strategy. The Ministry has also concluded the development of related job descriptions for all positions on the structure, including detailing requirement for each position.

In parallel, MPW, in cooperation with international development partners, is in the process of developing the Road Asset Management System (RAMS) to guide the maintenance of the road network, ensuring adequacy of maintenance of the SRN. It is also in the process of developing project management systems, road design and construction supervision methods and standards.

Additionally, MPW is working with the Ministry of Finance (MoF) to establish the Road Fund Unit (RFU) at MoF, and is assessing various alternatives for road financing.

MPW's current efforts in institutional and capacity challenges can only be achieved and maintained through a strong commitment to continuous development until the reforms become irreversible.

Main Institutional Capacity Challenges in MPW

Functional Fragmentation	The legacy of fragmentation of the functions related to the road sector into several agencies weakens accountability, in addition to creating inefficiencies and ineffectiveness through gaps or duplications.
Lack of Regulatory Framework	The lack of regulatory framework of MPW, including a law establishing the Ministry, in addition to related regulations and instructions hampers institutionalization.
Poor Organizational Structure	Different functions and responsibilities under MPW are going to be reassessed for optimal structuring. As a result, it will be determined whether these functions are going to remain within MPW or as independent units outside of MPW. These include private sector type functions or responsibility related to the ownership of material plants, implementation of periodic maintenance, maintenance of heavy machines and vehicles, consultancy services and construction supervision, and the National Material & Construction Laboratory.
Outdated Systems	In addition to the ongoing RAMS and GIS development at MPW, other specialized technical and technical support systems related to road planning, road safety, emergency maintenance and technical audit are either outdated or non-existent.
Weak Road Safety Policy	Road safety issues have not been adequately addressed, and the current road safety condition in the country is weak.
Weak Communication	All inter-agency communications and cooperation related to road and road O&M planning, emergency maintenance and road safety are weak or non-existent. Inadequate channels and procedures for public complaint, involvement, outreach and participation in the different activities of MPW.
Weak Capacity	Existing capacity and skill level of MPW staff is weak both as it relates to specialized systems and with regards to general and specialized skills.
Poor work environment	After years of neglect and lack of maintenance, MPW's office is in dilapidated condition, which contributes to a demoralizing work environment.

Road Safety

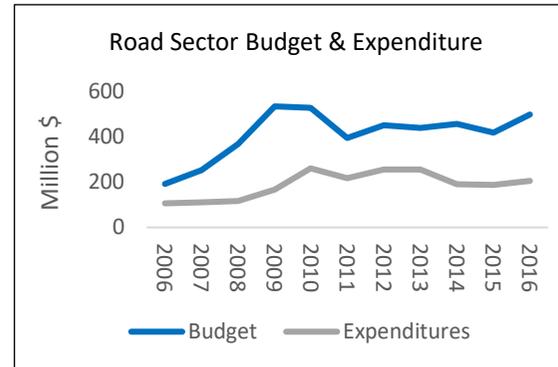
Road safety did not receive much attention despite road development efforts over the past 15 years and subsequent concerns related to road O&M were the primary concerns of GoIRA and the donor community.

The existing road safety conditions are not adequately known. MPW has never conducted road safety audits, and does not have adequate accident data collection and management system. Further, road safety planning, design or mitigation are non-existent functions that require development. There is also poor requirement for mechanical inspection of vehicles prior to licensing to ensure mechanical soundness of vehicles using the roads.

According to CAREC Road Safety Strategy Afghanistan loses about US\$ 760 million annually due to poor road safety, which is equivalent to about 3-4% of the national GDP. Afghanistan suffers from lack of road safety policy and a national road safety strategy. MPW plans to develop the National Road Safety Strategy (NRSS) in line with the CAREC Road Safety Strategy and create a crash database to ensure adequate accident data collection and management for future improvement of the network. As part of the NRSS, a nationwide road safety audit program will be introduced to identify safety issues and blind spot locations in SRN, and consequently safety will become an essential part of all road engineering-designs.

Road Sector Financing

After national security, infrastructure sector, specifically roads, receives the highest level of funding. MPW is the second largest Ministry that receives direct government funding allocations.



The above illustrates the large deviation of the actual expenditures from the budget. From 2006 to 2016, the government, on average, was able to spend about 47 percent of the budget. The weak expenditure to budget ratio can be attributed to procurement related delays, the security situation, inadequate project implementation planning, poor engineering designs, and at the macro level weak programming.

International development partners have played an essential role in developing the road sector in Afghanistan. Whether through construction of national highways, provincial and district level roads, major bridges and other road structures, or capacity building and road maintenance; the support of the international development partners

has been critical to the road network, and by extension socio-economic development.

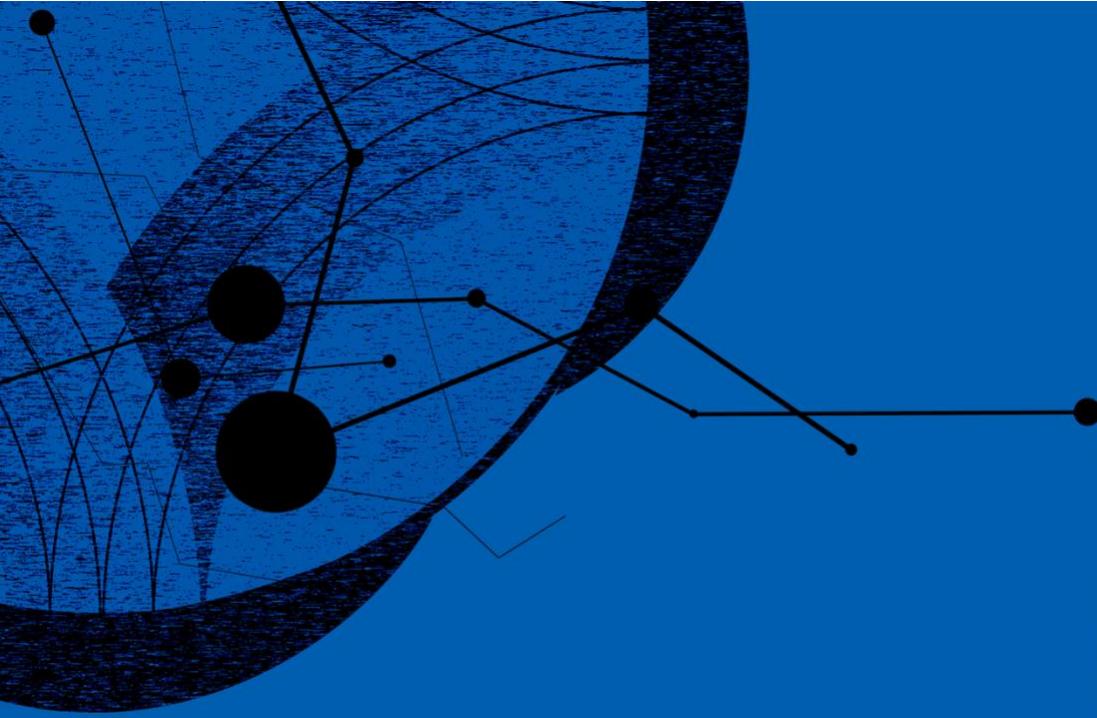
MPW recognizes that it will continue to require international development partners' support in the foreseeable future; to ensure adequate development and O&M of the road network. Nonetheless, given the important contribution of the road sector towards national socio-economic development, the government is committed to increase its funding for the sector, including funding allocated for road O&M.

Under likely fiscal constraints, providing the opportunity for the private sector to partner with the government in road sector development and O&M projects holds great potential. For that purpose, MPW is planning to establish the capacity within the ministry or in partnership with MoF to manage the funds for the sector.

MPW is also working with MoF to establish RFU to specifically earmark funds for road development and O&M. However, some challenges remain to be addressed. The policy framework related to road user fees and taxes reflects the ad hoc approach adopted so far and highlights the opportunity to implement fundamental reform with potential partnership of the private sector. The Ministry is assessing the potential of various PPP schemes for highway development as well as operation & maintenance mechanisms. However, for such mechanisms to be realized on the ground, further studies with wider scope are required to be conducted resulting in specific recommendations and solutions.

Summary of Existing Conditions

Physical Conditions of the SRN	Institutional Capacity of MPW	Road Safety	Road Sector Financing
<ul style="list-style-type: none"> ▪ National Highways & International Connections: <ul style="list-style-type: none"> ▪ The National Highways and the international connections are not adequately developed to ensure network efficiency, especially for trade. ▪ Major portions of the National Highways require construction. ▪ Congestion and delays at bottlenecks near urban centers and the Salang Tunnel create serious network inefficiencies, whether along the SRN or within major urban areas. ▪ O&M of the national highways has been inadequate creating substantial reconstruction and maintenance backlog. ▪ Lack of service facilities for drivers, especially along international extensions. ▪ Provincial Roads: <ul style="list-style-type: none"> ▪ Only about a third of the provincial roads are paved. ▪ Some provinces, including Nouristan has no access to provincial roads. ▪ O&M of provincial roads has been inadequate creating substantial reconstruction and maintenance backlog. ▪ District Roads: <ul style="list-style-type: none"> ▪ About 90 percent of the district roads are unpaved. ▪ Many districts have no access to district roads. ▪ With few exceptions, gravel is not sustainable for road surfacing in Afghanistan rendering many of the gravel roads in poor conditions. ▪ O&M of district roads has been inadequate creating substantial reconstruction and maintenance backlog. 	<ul style="list-style-type: none"> ▪ The fragmentation of the functions related to the road sector into several agencies weakens accountability, in addition to creating inefficiencies and ineffectiveness through gaps or duplications. ▪ The missing regulatory framework of MPW, including a law establishing the Ministry, in addition to related regulations and instructions hampers institutionalization. ▪ Different functions and responsibilities under MPW must be reassessed for optimal structuring whether within MPW or as independent units outside of MPW. These include private sector type functions or responsibility related to the ownership of material plants, implementation of periodic maintenance, maintenance of heavy machines and vehicles, consultancy services and construction supervision, and the National Material lab. ▪ In addition to the ongoing RAMS, road design and construction, including quality assurance, and GIS development at MPW, other specialized technical and technical support systems related to road planning, road safety, emergency maintenance and technical audit are either outdated or non-existent. ▪ Road safety issues have not been adequately addressed, and the current road safety condition in Afghanistan is weak. ▪ All inter-agency communications and cooperation related to road and road O&M planning, emergency maintenance and road safety are weak or non-existent. ▪ Inadequate channels and procedures for public complaints, involvement, outreach and participation in the different activities of MPW. ▪ Existing capacity and skill level of MPW staff is weak in both specialized systems and specialized skills. ▪ Poor conditions of work environment inhibit productivity, staff morale and reduce efficiency. 	<ul style="list-style-type: none"> ▪ Road safety has not been a primary issue for the donors or MPW. ▪ The existing road safety conditions result in estimated annual costs of \$760 million or 3 to 4 percent of GDP. ▪ Road Safety Audit has never been conducted in Afghanistan. ▪ There are no road safety policies or national strategy in this regard. ▪ Accident data are not adequately collected or managed. ▪ Road safety planning, design and mitigation are almost non-existing. ▪ No mechanical pre-licensing inspection of vehicles is conducted. ▪ Law enforcement related to unlicensed drivers and vehicles is very weak. ▪ Public awareness and outreach programs are inadequate. 	<ul style="list-style-type: none"> ▪ The continued security situation limits funding availability for the road and other sectors in Afghanistan. ▪ Donor support is expected to be required in the foreseeable future. ▪ The lack of adequately developed national policies to drive the mechanism of road related taxes and fees. ▪ Potential partnerships with the private sector for road development and O&M are hindered by weak regulatory framework and related tools in addition to weak capacity.



Strategic Direction

- Vision
 - Mission
 - Goals
- 

Vision, Mission, and Goals of MPW



Goal III "Enhancing Road Safety": A key indicator of the quality of the road network is traffic safety. This goal is concerned with addressing hazardous conditions and ensuring overall safe traffic operations with the aim of reducing the overall costs of accidents.

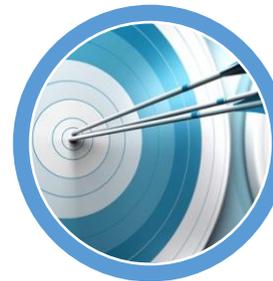


Goal II "Improving Road Network Access and Connectivity": Better access at reduced user costs are primary tools for economic development and social equity. This goal is concerned with ensuring international and national level connectivity and accessibility to support economic growth, and with the need to ensure that all communities, especially, the geographically marginalized are afforded adequate access to the economic and social opportunities of the country.

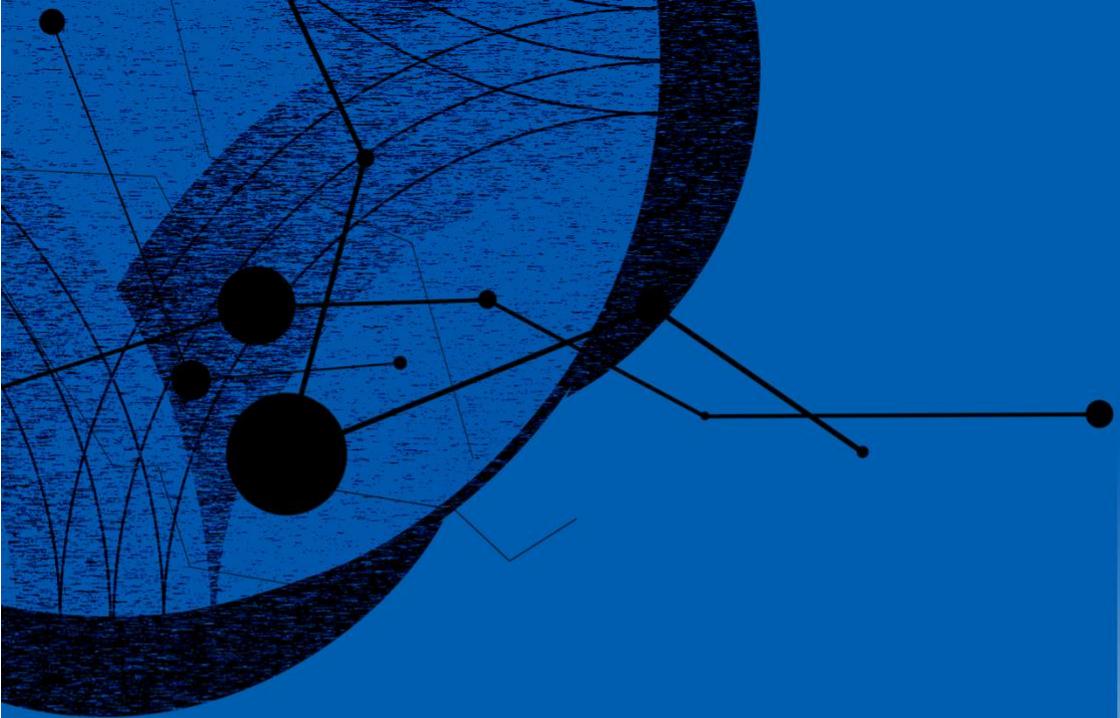


Goal I "Ensuring Sustainable Road Investment" : Medium to long-term road development requires adequate capacity and funding to ensure sustainable operations & maintenance of existing road assets and investments and to enhance the ability to develop and implement new projects. This goal is focused on ensuring adequacy of institutional capacities of MPW and financial sustainability of road investments.

Vision: Ensuring sustainable road investments and continuous development of a safe and efficient road network that enhances connectivity and access throughout Afghanistan and with its neighboring countries.



Mission: Ensuring sustainable road investments and continuous development of a safe and efficient road network that enhances connectivity and access throughout Afghanistan and with its neighboring countries.



Strategies

- Strategies to Ensure Sustainable Road Investments
 - Strategies to Improve Road Network Access and Connectivity
 - Strategies to Enhance Road Safety
- 

Strategies to Ensure Sustainable Road Investments

Sustainability requires continuous development and improvement to meet rising demands of the population for the services provided. The key to sustainability is availability of both adequate financial and technical resources to enable sector maintenance, improvements and upgrade.

Afghanistan has been dependent mainly on donor funding for the development of the road sector. Such arrangement is not sustainable over the medium to long terms. Financial sustainability also suffers, not only from lack of financial resources, but also due to ineffective or inefficient resource allocations, in addition to the weaknesses of the controls required for accountability. Consequently, the capacity and institutional development of MPW are essential for a sustainable road sector in Afghanistan.

MPW adopted two key strategies to enhance the overall sustainability of the Strategic Road Network in Afghanistan over the medium and the medium to long term, as follows:

- Build the human and institutional capacities of MPW
- Improve financial sustainability of the road sector

Strategies to Improve Road Network Access and Connectivity

Accessibility and connectivity are two important indicators of the quality of the road network, including its impact on socio-economic development.

Several variables define transportation system accessibility. These include physical conditions such as the availability of a road, its proximity to development or users' origin and destination, and its actual physical condition, which impacts delays, travel times and by extension overall user cost.

Three strategies were defined to improve accessibility and connectivity throughout Afghanistan, in addition to improving regional accessibility:

- Strengthen Afghanistan's primary economic and trade corridors
- Enhance subnational connectivity
- Ensure adequate road O&M

Connectivity of the road network, while in many cases it is intertwined with access, addresses the distribution of transportation services, or road network, in a given area. In this regard, connectivity is mostly concerned with ensuring Afghan communities have adequate connection to the road network, thus serving socio-economic development at the local level, and ensuring more equitable

allocation of resources, especially to geographically marginalized areas.

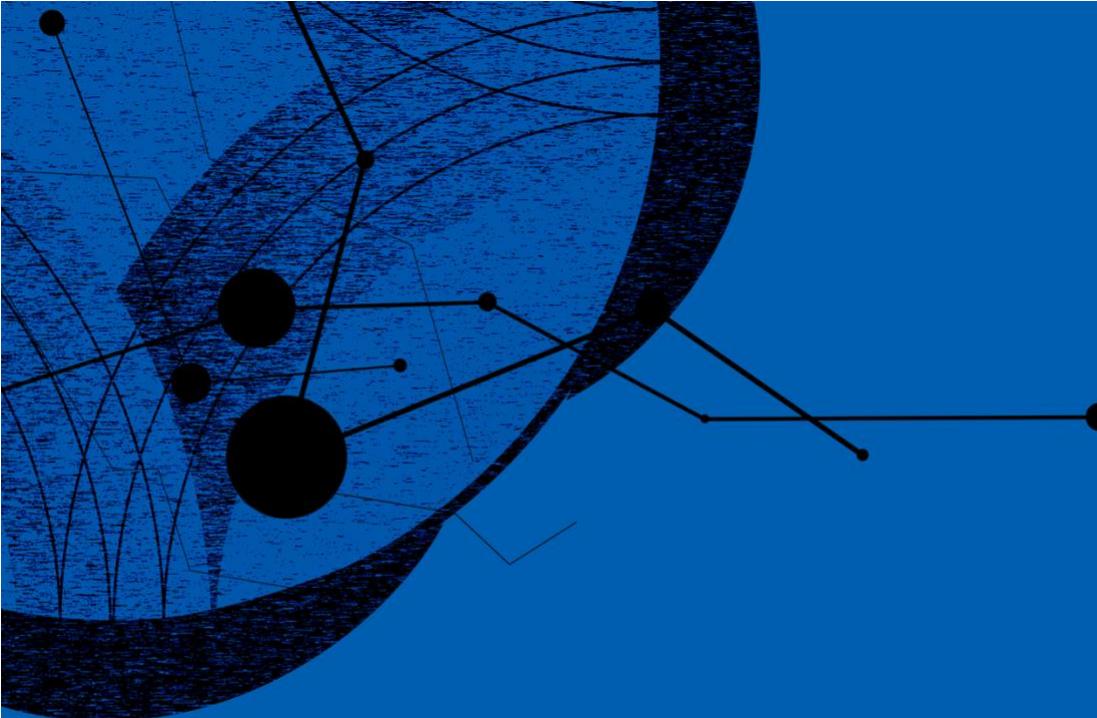
Strategies to Enhance Road Safety

Road safety is an essential indicator of the performance of the road network. Road crashes result in substantial costs to human life and property damage, in addition to creating substantial delays and inefficient operations along the network.

Addressing road safety issues facing the SRN in Afghanistan is hindered by lack of adequate crash data, road audits and tools required to mitigate hazardous and high accident locations. Further complicating the traffic safety issue is the need for substantial public involvement, availability of emergency services to attend to crash victims, and enforcement of traffic rules.

To address these multi-disciplinary challenges facing the road safety in Afghanistan, the following is a summary of key strategies:

- Adequately mitigate high risk hazardous locations
- Adopt a holistic approach to road safety



Strategy Interventions

- **Ensure Sustainable Road Investments**

- Build Human and Institutional Capacity of the Ministry
- Enhance Road Sector Financial Sustainability

- **Improve Road Network Access and Connectivity**

- Strengthen Afghanistan Primary Trade Corridors
- Enhance Sub-National Connectivity and Access
- Ensure Adequate Road O&M

- **Improve Road Safety**

- Adequately Mitigate High Risk Hazardous Locations
- Adopt a Holistic Approach to Road Safety

- **Summary of Strategy Interventions**

Based on the strategies defined for each goal and several key interventions, MPW defined its medium-term initiatives.¹ The following is a summary of the main defined initiatives and the primary interventions by strategy for each goal.

Ensure Sustainable Road Investments

To ensure investment sustainability in the road sector, both institutional capacity building and financial sustainability must be addressed. The following is a summary of the main initiatives developed by the Ministry to ensure investment sustainability.

1. Build Human and Institutional Capacity of the Ministry

To address the current weak institutional condition and capacity of MPW, several initiatives were developed to improve performance efficiency and effectiveness, and to establish the required controls for accountability.

Key Initiatives to Develop and Strengthen Human and Institutional Capacity in MPW

1.1 Develop the Regulatory Framework

¹ While different strategies were adopted by MPW to address the requirements to move from the existing situation towards the defined goals, defined initiatives over the medium-term may address, or achieve the objectives or

This initiative is intended to overcome the weaknesses associated with the lack of a regulatory framework governing the transport sector and the sector's scope and sphere of responsibilities. It involves two main interventions, as follows:

The National Transport Sector Strategy: The current state of division of authority amongst the several agencies with transport sector responsibilities creates systematic inefficiencies, gaps and dilutes accountability. Therefore, the development of the regulatory framework of MPW and/or the transport sector entities must be preceded by the development of a National Transport Sector Strategy. A part of this strategy shall assess the institutional issues hindering the development of the transport sector, including allocation of functions. Based on the outcome of the Transport Sector Strategy, the regulatory framework for the transport sector can be developed.

Transport Law and Regulations: Based on the results of the transport sector functional analysis through the National Transport Sector Strategy, a law establishing the ministry, detailing its mandate and key responsibilities will be developed. Additionally, all related regulations and procedures relevant to the transport sector will be developed.

1.2 Improve Organizational Structuring of MPW and Inter-Agency Coordination

requirements of more than a single strategy or goal. Such complementarity and overlap were taken into considerations in defining the different initiatives and are elaborated under interventions. A case in point is road O&M, which is

In developing its transitional organizational structure (Annex II) MPW was keen to ensure efficiency of operations, cost effectiveness and the establishment of adequate controls for accountability through the separation of functions. As a part of the structuring process, the planning function was separated into a policy, strategy and planning sector within the Ministry, thereby, separating planning from implementation to ensure transparency and adequacy of planning.

The Material Plants, originally under the O&M sector of MPW, were separated into an independent unit under the Minister for subsequent potential transformation into a State-Owned Enterprise (SOE). Additionally, a Project Management and Delivery Unit was established within the Ministry to overcome weak local consulting industry. This unit, which includes project development, design and supervision, was established with the view of potentially transforming it into a Consultancy Service SOE.

Further, the Afghanistan National Construction Laboratory (ANCL) with authority over licensing of material tests by private sector construction material testing laboratories was structured within the Ministry. The structuring of ANCL within MPW was done with the view that future options for its structuring will be assessed to consider its role as an independent agency or within MPW.

This intervention will build upon the work already done by MPW to finalize the transitional structure

required to meet the objectives of both improved access and financial sustainability.

of the Ministry, especially, as it related to the private sector type functions, and the need to finalize their related structures.

In addition, this initiative will complement the work under the initiative concerned with specialized systems development in the area of inter-agency coordination and cooperation.

This includes reactivation of mechanisms related to policy and plan development and programming coordination; namely the re-establishment of the Infrastructure Development Cluster Secretariat following an update of its Terms of Reference. Other mechanisms to be developed include the emergency planning and emergency response in addition to accident reporting and traffic management and operations.

1.3 Develop Systems for Specialized MPW Functions

To overcome the shortcomings associated with weak and outdated systems that exist in MPW, the Ministry, as a part of its ongoing reform efforts, is keen to modernize its existing and specialized support functions. This initiative includes two main programs, one for systems related to specialized technical functions and the other for specialized support functions.

Systems for Specialized Technical Functions

This program is concerned with the development of the systems requirement for the different specialized technical functions at MPW. It includes

the development of systems to support the following functions:

- Road planning, design and construction, including quality assurance and control functions.
- Road Asset Management System (RAMS) and O&M implementation functions.
- Road emergency maintenance risk assessment, management and implementation functions.
- Road safety planning and mitigation system
- Construction material testing and development

Afghanistan National Construction Laboratory

In partnership with Ohio University, MPW is developing the national material testing laboratories in Afghanistan. The work includes development of all related functions and capacities with provisions for equipment.

Initially, the lab will conduct material testing to assure quality of construction material, and shall, in partnership with other agencies and research institutions work to improve construction material standards with the view of enhancing material quality and lowering costs.

ANCL will subsequently become the certifying authority of all material tests of private sector and other material laboratories with focus on quality assurance of other labs and continued material development.

Currently, MPW is implementing the RAMS through ADB funded project. Support will be provided for the development of the Road safety planning and mitigation system. In addition, through the partnership with Trans- Hindukush Road Connectivity Project (THRCP), funded by World

Bank, MPW will develop substantial parts of the road design and project management and supervision functions, including quality assurance and control. However, further funding is required to support MPW in developing the systems for road planning and road emergency maintenance functions, in addition to substantial components related to road safety planning and mitigation system.

MPW estimates the need for additional funding in the amount of about \$ 6 million for the development of the different systems related to specialized technical functions of MPW.

Systems for Specialized Support Functions

In addition to the specialized technical functions, MPW requires the development of specialized support functions, including the MIS/GIS systems, technical audit functions and public complaint and participation system.

Currently, the Ministry is developing the GIS system of the Ministry with adequate provisions for equipment, software and training. However, the Ministry requires the assistance of its international partners in developing the system for technical audit functions and the public compliant and participation system. The estimate cost of developing these systems is \$ 1 million.

Additionally, provisions for road maintenance equipment are needed to establish Qway-e-kar. GoIRA has committed \$ 6 million for its establishment, including ensuring adequacy of related equipment.

Some of the systems for specialized technical and support functions are currently being developed at MPW, including RAMS, road design & project supervision, material laboratory, and maintenance implementation. Additional support is needed to assist the ministry in developing other essential systems, including those related to road planning, emergency maintenance, road safety, technical audit and public compliant and participation functions. The total estimated cost for the development of these systems is \$ 13 million over the period from 2019 to 2023.

1.4 Build the Capacity of MPW Staff

The existing human capacity of MPW employees must be further developed to ensure compatibility with the new systems being implemented at the Ministry. With the advancement of technologies and the need for employees to gain new and more advanced skills, MPW foresees the need to continuously build the capacity of its own staff. The Ministry is finalizing its capacity building strategy that will look into this topic in a more holistic and detailed way.

This initiative is the vehicle through which MPW will work with its international partners to ensure that the capacity of its employees is in line with the requirements to develop the road sector in Afghanistan. The initiative includes two main programs, as follows:

Provide Specialized System's Training

MPW will ensure that any new system developed within the Ministry should include sufficient

provisions to train staff on the system operation and maintenance. Therefore, MPW will work with its partners to ensure that all new systems are adequately institutionalized within the Ministry, and that the Ministry's staff are afforded adequate training related to all methods, tools and equipment required as part of the new systems. It is estimated that 80 percent of MPW technical employees will be trained on using the new systems.

The cost of this program is included as a part of the specialized system development initiative of this strategy.

Develop General and Specialized Skills of MPW Staff

This program includes two components to ensure development of related general and specialized skills of MPW employees.

General Skill Development

This component is focused on building the skills of related MPW employees in different support areas; it is about continuous development of MPW's human resources.

The areas that require general skill development will be determined annually by the Human Resource Department in coordination with the different units of MPW. Training may include, but is not limited to: language, computer, time management, leadership, etc. The program is envisaged to be implemented in partnership with local universities, civil society or private sector organizations.

Specialized Skill Development

This component is concerned with developing specialized skills of MPW employees in different areas related to engineering technology, construction management technology, surveying, MIS and GIS, in addition to potential technical and vocational training to support the operations and maintenance of heavy vehicles and machines.

Following detailed assessment of the specialized skill development needs within MPW, the Ministry envisages the implementation of the program through partnership between local higher educational or Technical and Vocational Education institutions and an international institution with international donor support.

This initiative to build the capacity of MPW staff requires the investment of \$ \$250,000 for continuous skill development training funded by MPW, in addition to specialized skill development through the Peace Scholarships and Ohio University. This is on top of the specialized system training, which is expected to be carried out as a part of new system development within MPW.

1.5 Enhancing the Work Environment at MPW

To improve the current state of the working environment at MPW, this initiative focuses on improving the office conditions, equipment and furniture at the central and provincial offices of the Ministry. The following is a summary of interventions:

Rehabilitate MPW

This intervention is concerned with rehabilitating and maintaining the existing buildings of MPW, in addition to adequately ensuring required provisions for key IT and maintenance equipment and furniture at MPW Headquarters, zones and provincial offices.

The total estimated cost of this intervention is \$2 million; one million for office rehabilitation and one million for provisions of IT equipment and furniture



The establishment of the RFU at the MoF is essential to ensure adequate government funding earmarked for road development and O&M financing. The estimated cost of this initiative, including the development of the systems for vehicle road tax stickers and other initiatives being considered by MPW is estimated at \$ 3 million.

Construct a Modern Office Building for MPW

The existing offices of MPW were not originally designed as offices. The buildings were designed as apartments, and subsequently converted into offices. Further, in line with the government's policy

to move the Ministries to Darulaman Government Complex, to ensure more efficient operations, and to reduce traffic congestion within Kabul, MPW intends to build a new office building in Darulaman Government Complex.

The estimated cost of the building, including design, construction, equipping and furnishing is estimated at \$ 10 million.

2. Enhance Road Sector Financial Sustainability

While the systems are being developed, MPW's ongoing plan is to focus on adequate road O&M following proper inspections of roads and structures that will enhance the financial sustainability of road investment in the country. The issues addressed in this part of the strategy are concerned with ensuring adequacy of funding for road development and O&M, which would result in a progression towards self-sufficiency for MPW.

MPW recognizes that the involvement of Afghanistan's international development partners in the road sector is essential for the medium-term. However, in line with the national policy, the Ministry aims to move towards self-sufficiency in road O&M in the medium-term.

To achieve this, MPW will begin with addressing financing requirements for Road O&M. MPW has adopted two major initiatives: (i) A focus on revenues and earmarks of funds, and (ii) Partnership with the private sector. The following is a summary of these initiatives.

2.1 Improve Financing of the Road Sector

Recognizing the need to ensure allocation of specific funds for road development and O&M, the GoIRA has decided to establish a Road Fund Unit (RFU) at the Ministry of Finance (MoF) with funds specifically earmarked for road development and O&M.

To enable the implementation of this initiative, MPW envisages the need to conduct a detailed assessment related to the implementation of road user fees and taxes, leading to policy recommendations for future actions.

In addition, MPW requires the assistance of its international partners in funding the implementation of different initiatives related to road fees and taxes, including tolls and vehicle Road Tax Stickers, which are under considerations by the Ministry.

The RFU will be fully financed through specific funds earmarked from the road user fees, taxes and contributions from the national budget.

MPW receives some support through the ADB, however additional funding is needed to implement this initiative. This funding is necessary for detailed assessment and for the implementation of systems related to vehicle road tax sticker initiative and other identified initiatives. The estimated additional cost is \$ 3 million.

2.2 Public-Private-Partnership (PPP)

Learning from the successful experiences of most developed and many developing nations, there are intrinsic value in engaging with the private sector through partnerships in infrastructure development, operation and maintenance. The GoIRA has decided to provide the opportunity for more private sector involvement in the road sector.

This initiative is intended to support the potential partnership with the private sector. It involves the need to develop the regulatory and institutional framework, including the tools required to ensure the adequacy of MPW's capacity to implement such partnerships. In addition, the initiative includes the development and implementation of the Salang Special Purpose Vehicle (SPV) as a pilot project.

MPW expects that the implementation of this initiative, including the implementation of the Salang SPV initiative will require at least three years at an estimated cost of \$ 5 million.

Note: Prior to implementing the SPV at Salang, the pavement, tunnel and galleries require full rehabilitation and that is not possible without shutting down the entire route. To close the Salang pass, an alternative route for North-South connectivity will be provided via Dushi-Bamiyan road, currently under construction with the support of the World Bank. This diversion route will be completed by 2021.

Improve Road Network Access and Coverage

MPW has defined three strategies to improve accessibility and coverage throughout the country, in addition to improving regional accessibility, which focuses on strengthening their primary trade

Partnership with the private sector in the development and O&M of the road sector is a priority for GoIRA. MPW, through this initiative plans to develop the related regulatory and institutional frameworks in addition to implement the Salang SPV. The estimated cost of this initiative is \$5 million.

corridors, enhancing sub-national connectivity and access, and ensuring adequate O&M.

1. Strengthening Afghanistan's Primary Economic and Trade Corridors

The primary economic and trade corridors in Afghanistan cover all National Highways and their international extensions. To address the major challenges facing the National Highways and international connections, as identified by MPW, two major initiatives were developed; One to address the connectivity and access improvement, while the other is concerned with improving the congestion conditions. The following is a summary of these initiatives.

1.1 International and National Highway Connectivity and Access

This initiative addresses the National Highway network inefficiencies arising from weak connectivity and access due to the existence of roads, their surface type and condition. It serves the National Highway network including its international connection, and its connectivity to primary areas of economic development in Afghanistan. It includes interventions related to improving access to defined Special Economic Zones and Dry Ports in Afghanistan through the construction, upgrade, rehabilitation or adequate maintenance of roads.

Key Interventions under the Initiative of National Highway Connectivity and Access

To enhance connectivity and access inefficiencies along the National Highways and international extensions, MPW, plans to implement several key interventions. Map 2 illustrates the major roads to be constructed or upgraded.

- **Completion of the National Ring Road:** The northwestern part of the Ring Road, about 233 km, extending from south of Faryab to south of Badghis is currently under construction with the support of the Asian Development Bank (ADB). The conclusion of the project will complete the construction of the Ring Road. It is expected that the project will be fully implemented by 2023 at an estimated cost of \$ 700 million.

National Ring Road (NRR) is not just a connectivity project; rather it is an economic developer of the country by covering more than 80% of population that live within 50KM of range of the road. Meaning that, National Ring Road will bring a possible economic revolution by carrying national highways, national corridors (East-West, North-South) and regional corridors at one glance. Precisely, the National Ring Road will not only facilitate the movement of people, and local goods but will also provide fabulous facilitation in movement of national and regional traders from one part to other parts of the country by connecting all national corridors and highways simultaneously. In sum, the National Ring Road is crossing almost all those provinces which are neighboring to regional countries.



• **East-West Corridor:** The ministry is working on developing the East-West Corridor from Kabul to Herat via Bamyan and Ghor provinces. Some parts of this corridor are under construction with funds

from the Italian government as well as the Afghan government, yet about 480 km require funding. Once concluded, this corridor will cut the travel distance along the east-west corridor extending from Pakistan in east to Iran in the west by more than 25 percent. MPW expects conclusion of under construction parts of this corridor by 2021. MPW is planning to conclude project preparations of the whole corridor by 2020 and reach donors, including MoF, for the required \$ 530 million.

East-West Corridor will serve as a bridge that connects the Western provinces the Eastern provinces. At the international level, it will connect Iran to Uzbekistan, Tajikistan and, China through Silk Road. The corridor will play an important role in the proliferation of regional trade and transit. It will bring significant convenience in travels for the national and international passengers and reduce the transit costs. It is estimated that the corridor will reduce average distance of 1700km among the regional countries which will result in increased regional trade and economic activities. The Afghan Government will generate handsome amounts of revenue in the form of transit fees. The Afghan trade balance, which is currently in deficit, will move towards a surplus as the corridor brings acceleration in the export of minerals and local agricultural products to the regional countries. According to our estimates, the corridor will facilitate the trade of 2,260 million tons mining reserves (\$420 billion value). Finally, the corridor will create opportunities for the prospective investors to set up industries on various mineral reserves that will have a profound impact on the Afghan economic growth.

• **Construction of the Kabul-Jalalabad Sapary Road:**

A part of the East West Corridor, this road is a second highway connecting Kabul with Jalalabad towards the borders with Pakistan. The heavy traffic and limited potential of expanding the existing road meant that another road needs to be built to accommodate the traffic demand, including substantial heavy vehicle traffic. The length of the road is 150 km and is expected to cost \$ 150 million.

• **The North-South Corridor - Kandahar to Mazar-e-Sharif:**

To enhance the national and international connectivity, MPW is planning to develop two north-south corridors. The first corridor, 909 km long, runs from Kandahar to Mazar-e-Sharif. Construction was concluded on several sections along this road. These include a 135 km section from Mazar-e-Sharif to Dar-e-Suf, a 42 km section from Bamayn to Yawkalang and 194 km section from Kandahar to Chura. Additionally, a 178 km long section, from Dara-e-Suf to Yawkalang is currently under construction at a cost of \$ 206 million. The section from Kandahar to Tarin Kot, south of Chura, was severely damaged due insurgency and explosions. MPW is seeking the assistance of its international partners to develop the remaining sections of the corridor, about 360 km, in addition to most of the Kandahar – Tarin Kot section (about 160 km), at an estimated cost of \$ 550 million.

The use of Torkham route by Central Asian countries for trade and transit is fraught with major challenges. However, being the only route that connects the North of Afghanistan to the South, these countries rely on it to connect South Asia.

Hence, the establishment of North-South Corridor as an alternative to Torkham route is necessary. This corridor will provide alternatives for the Central Asian countries to connect with South Asia with a reduced travel time of around 529km (estimated). Considering this spectacular reduction in travel time, North-South corridor will speed up the regional trade and transit and become a great source of revenue for the Afghan government. Just like East-West corridor, this corridor will also facilitate the export of Afghan minerals and agricultural products to the regional countries.

• **Feasibility Study and Design for The North-South Corridor- Jawzjan to Nimroz:** The second alternative north-south corridor is 703 km long and runs from the Ring Road at Nimroz in the south to Sheberghan in the north. Currently, a 52 km section from Sheberghan to Sar-e-Pul is under construction. The remaining section of this corridor, 649 km long, is of second priority in the medium-term, but given its impact on overall connectivity and potential for international trade, the corridor is envisaged to be developed in the medium to the long term. A feasibility study and design of this corridor will be carried out as a part of this strategy to be concluded before 2023 at a cost of \$ 15 million.

Secondary North-South Corridor is an alternative corridor that is planned to connect Afghanistan to South Asia to Central Asia particularly Turkmenistan, Tajikistan, and Uzbekistan simultaneously through only one transit route rather than crossing different routes or international borders. The corridor is expected to accelerate the role of Chabahar port in terms of transit and the connectivity of Central Asia to South Asia, particularly to India. By connecting the region and facilitating transit, the secondary North-South corridor will provide one route transit. This will not only enhance national and international trade but will also make it easy for Afghanistan to trade its minerals reserve in both Central Asia and South Asia without any considerable delay. Hence, this corridor can be a game changer in the region by capitalizing on the strategic locations.

• **Khost Economic Corridor:** The richest zone with pine nuts production, can generate a market value of \$421 million annually within the boundaries of Afghanistan. This region potentially produces up to 25k MTs of pine nuts by contributing up to 60% in international pine nuts market. However, this opportunity due to lack of infrastructure connecting this region to domestic and regional markets has been stolen from Afghanistan. To properly utilize this opportunity, there is the need for construction of six different strategic provincial and district roads with a total length of 175.5 km in this region. Once concluded, it will enhance inter-connectivity between provinces and districts with major pine nuts resources, in addition to connecting the region to national ring road & highway, neighboring countries, and Khost national airport. To construct

these networks, there is a financing need of \$69.3 million.



• **Feasibility Study and Design for The Kabul-Torkham Expressway:** This highway is a part of the Peshawar-Kabul-Dushanbe trade corridor passing through Torkham. This project will complement the works, expected to commence soon, from Peshawar to Torkham. It is a 175 km long road that serves the regional connection of essential economic areas south of Kabul, thereby substantially enhancing the economic potential of the region. With the support of the World Bank, a feasibility study and design of this corridor will be carried out as a part of this strategy to be concluded by 2023 at a cost of \$ 5 million.

To implement the rehabilitation works, MPW will develop an action plan with an annual program of roads and road structures to be rehabilitated based on importance of each road to network efficiency and the ability to implement in a timely manner.

- **National Highways and International Connections Rehabilitation Program:** Lack of road maintenance combined with sabotage of culverts and bridges by insurgents resulted in a large rehabilitation backlog along many roads. It is estimated that 13 percent, almost 930 km, of paved national highways require rehabilitation, and similar requirement for road structures along these roads. These include major highways connecting border crossings, special economic zones and dry ports, which are essential for economic development. This program provides for the rehabilitation of these roads and structures. The total estimated costs of this program are estimated at \$ 420 million from 2019-2023.



- **National highway Rest Area Program:** This program aims at developing 20 rest areas along international extensions of National Highways within the next five years. The program will provide essentials services to drivers, including

international truck traffic. It is expected to cost a total of \$10 million and will be designed as a job creation program to maximize its benefits. Further, considerations will be given for a role of the private sector in the construction, maintenance and operations of the rest areas. MPW will consider implementing this program in partnership with private sector and other government organizations.

1.2 Congestion Mitigation Initiative

This initiative is concerned with addressing the congestion created by major bottlenecks along the National Highways near urban centers and at the Salang Tunnel. The initiative is focused on the construction of roadway bypasses for bottleneck locations to overcome congestion, reduce delays,

The National Highway Connectivity and Access Initiative is expected to cost \$ 2.405 billion from 2019-2023. The cost includes \$ 1.66 billion for major National Highway construction and upgrade projects covering 1,343 km, a \$ 20 million for the feasibility study and design of two major highways, 930 km National Highway Rehabilitation program at an estimated cost of \$ 420 million, and a national rest area development program for \$ 10 million.

improve traffic operations within major urban centers, and enhance overall network efficiency.

Key Interventions for the Congestion Mitigation Initiative

- **The Herat Bypass:** A portion of Herat bypass is 45 km long funded by the Italian cooperation and implemented by MPW. The total cost of the project is \$ 22.38 million, with the first section, 20.4 km concluded. The second section, 25.08 km, expected to cost \$ 12 million and construction is ongoing. It

should be concluded by 2019. Upon conclusion the project will mitigate the congestion in Herat and the delays related to through moving traffic, especially trucks, thereby enhancing overall efficiency and trade movement with Iran. GoIRA plans to complete feasibility study and detailed design of Herat Ring Road to connect all intersecting highways.

- **Kabul Ring Road:** This is a 117 km long bypass road encircling the city of Kabul, allowing through moving traffic, including trucks, to bypass the city from all directions. The total estimated cost of the project is \$540 million, of which \$ 158 million are committed from the Saudi Development Fund, 48 million, the Islamic Development Bank, \$ 74 million and \$ 36 million from GoIRA. The design of the first 20.7 km has been completed and a General Procurement Notice has been published. There are ongoing discussions with donors for funding of the remaining parts. The expected conclusion date of the project is by 2023.

Kabul Ring Road Project (KRRP) is expected to play the role of a mediator by connecting national corridors (East-West & North-South) to the regional corridors (CAREC). These spectacular landscapes of connectivity would allow the Kabul Ring Road to manage massive traffic congestion problem of Kabul City by accommodating 52,000 average daily

Priority Economic Development Corridors		
Trans-Hindukush Road Connectivity Project (THRCP)	National Ring Road	East-West Corridor
<p>The THRCP financed by the World Bank, includes the construction of Baghlan to Bamyán road, in addition to rehabilitation works of the Salang road and tunnel. The project will also provide institutional support and project management support to MPW. The total estimated cost of the project is \$250 million. This includes \$ 170 million for the construction of the Bamyán to Baghlan bypass road, \$ 55 million for the Salang road and tunnel rehabilitation and \$ 15 million for goods and services for both roads. The remaining \$ 10 million is allocated for different capacity and institution building initiatives at MPW. The project is expected to conclude in 2020.</p>	<p>The National Ring Road, with a total length of 2,210 km, is the government's top priority because it is considered the backbone of Afghanistan's transport system and the principal conduit for national and international passenger and freight traffic. More than 80% of the people of Afghanistan live within 50 km from the road alignment. Reconstruction of the Ring Road started in 2002 and to date, 1,925 km have been completed under the assistance of the United States Agency for International Development, Japan International Cooperation Agency, World Bank, Government of Saudi Arabia, and Asian Development Bank (ADB). The ongoing construction of the 52-km section from Armalik to Laman, financed by the Government of Saudi Arabia, is expected to be completed by December 2018. The 233-km section from Qaisar to Laman is virtually the only missing link of the Ring Road. This link is strategically important, as it passes through one of Afghanistan's most remote and insecure regions. ADB is supporting the GoIRA in completing the missing link.</p>	<p>The East-West corridor is planned from Kabul to Herat via Bamyán & Ghor provinces. The project will reduce the travel distance from the eastern part of the country near Pakistan to the western part near Iran by more than 25 percent when compared to the existing Ring Road routes. Therefore, the project is instrumental both for national movement and international trade.</p> <p>The total length of the road is 776 km extending from Maidan, west of Kabul, to Herat. About 109 km sections from Maidan-Shahr westward were constructed through Italian and GoIRA funding. Also, MPW is currently implementing 100 km section from Hesa-e-Awal e Behsud to Behsud Markazi. Additional sections from Herat eastward to Gardandiwal are in the pipeline. MPW is seeking funding to construct the remaining 480 km sections of this road.</p>

traffic (ADT) volumes. Besides enhancing the connectivity and managing traffic congestion problem, Kabul Ring Road will also be a great revenue generator or initiator in terms of toll tax. Meaning that, in this way; Kabul Ring Road will not only be able to repay the loans by collecting enormous amount of toll tax but will also provide sufficient fund for road operation and maintenance in the future.

- **Urban Bypass Development Program:** This program is concerned with assessing the need for bypasses of National Highways near major urban centers in Afghanistan to mitigate congestion and enhance overall network efficiency. It includes

provisions for feasibility study and design for up to 10 main urban centers over the next five years. The estimated cost of the program is \$ 20 million.

- **The Bamyán to Baghlan Road and Salang Road & Tunnel Rehabilitation:** A new road is being built from Baghlan to Bamyán bypassing the existing Salang Tunnel to reduce congestion at the tunnel, its associated delays and inefficiencies. The estimated cost of the project is \$ 170 million to construct a 154 km road. In addition to enhance access at the tunnel, the project will provide an additional \$ 55 million for 70 km Salang road and tunnel rehabilitation, and \$ 15 million for goods and services for both roads. This is in addition to

institutional support component for MPW of \$10 million. The project is financed by the World Bank through the Trans-Hindukush Road Connectivity Project (THRCP) with expected conclusion date in 2021.

• **Feasibility Study & Design of New Salang Tunnel:** MPW is planning to build a new tunnel at Salang to complement the existing tunnel. With the ongoing project for the Salang bypass, this project is envisioned for the medium to long term to enhance efficiency at this essential trade route. The feasibility and detailed design of the New Salang Tunnel is currently being prepared, funded by the ADB and Afghanistan Infrastructure Trust Fund (AITF), which will be concluded by 2020 at an estimated cost of \$ 20 million. The estimated cost of the new tunnel between \$1.2 - \$2 bn. The implementation of the project is not expected to commence in the next five years.

The Congestion Mitigation initiative is expected to cost \$ 642 million from 2019-2023. The cost covers the development of Kabul Ring Road, the completion of the Herat bypass, in addition to the construction of the Salang bypass road and Salang road and tunnel rehabilitation. It also includes the costs of the feasibility study and design of a new tunnel at Salang, and a program for feasibility studies and design of urban bypasses to reduce congestion.

2. Enhance Sub-National Connectivity and Access

At the sub-national level, provincial and district roads connect the main population centers with major highways. These roads are essential for both economic and social development in Afghanistan. This initiative focuses on developing these roads by completing the construction of all provincial roads, ensuring roadway access to all districts and rehabilitating deteriorated roads. It includes two

initiatives, one for provincial road development and the other for district roads. National Rural Access Program (NRAP) funded by the World Bank and GoIRA is the main vehicle in MPW to implement district and provincial roads. MPW is planning to replace the program with a new road program using a different implementation modality. Design of the new program will take into account poverty ratio, level of investment, connectivity index and population. Based on this, a provincial road master plan will be prepared to ensure a consistent and balanced approach to road development in the country.

Provincial Road Connectivity Program (PRCP) GoIRA adopted the PRCP to ensure enhancement of subnational level connectivity and access. This program includes interventions related to the development, rehabilitation, maintenance and operations of provincial and district roads in Afghanistan. This strategy serves to highlight the different components of the program separated into provincial and district roads initiatives, in addition to maintenance components under the road maintenance initiative.

2.1 Provincial Road Development Initiative

The Provincial Road Development Initiative is concerned with ensuring adequate inter-provincial connectivity in Afghanistan.

Key Interventions of the Provincial Development Initiative

Two primary interventions were identified for the development of the provincial roads; construction or upgrade of existing roads and rehabilitation of deteriorated ones.

Construction and Upgrade of Provincial Roads

A total of 396 km of provincial roads is currently under construction or rehabilitation. Examples of these roads are: Sharana-Angar Ada, Faizabad-Eshkashim, Jabal Saraj-Nijrab, Lashkar Gah-Gereshk, and Butkhak-Surobi. In addition, there are currently 34 km of existing gravel roads and 397 km of planned provincial roads. MPW plans to conclude the ongoing construction work before the end of 2023 and will work to upgrade the 34 km of existing gravel roads and to build 80 km of the planned provincial roads. The total cost of this program is estimated at \$ 410 million and is expected to be concluded by 2023.

Rehabilitation of Provincial Roads

There are 1,115 km of paved provincial roads, of which 383 km are treated with Double Bituminous Surface (DBST) and 732 km are asphalt. Due to delayed maintenance about 25 percent of these roads have deteriorated and require rehabilitation. This program is intended to rehabilitate 280 km of provincial roads by 2023 for an estimated cost of \$ 60 million.

The Provincial Road Development Initiative is expected to cost \$ 297 million over a five-year period. It includes completion of 396 km of ongoing projects, upgrade of 34 km of gravel roads and build 80 km of new provincial roads at an estimated cost of \$ 210 million. Additionally, a total of \$ 60 million are needed for the rehabilitation of 280 km of provincial roads by 2023.

2.2 Improve District Level Access & Connectivity

GoIRA recognizes the importance of equitable distribution of resources and believes that its services should cover the entirety of the country and its population, irrespective of the geography. However, financial constraints and ongoing insurgency continue to hamper its ability to adequately reach its network, especially in rural areas.

For many district roads in Afghanistan, gravel is not sustainable due to quality of gravel, environmental impact or weather conditions.

MPW is working with its partners from OHIO University to develop and implement more sustainable alternatives that improve access, while ensuring cost-effectiveness.

GoIRA has committed up to \$5 million to invest in alternative designs and materials for these roads. A \$ 1 million pilot will commence in 2019.

Key Interventions to Improve District Level Access & Connectivity

- **District Level Access Improvement Program:** This program is intended to ensure that all districts in Afghanistan are connected to a district road. Part of this is being accomplished through the National Rural Access Program which will be concluded by the end of 2019. This program is also concerned with improving District Road sustainability through implementation of pilot program using alternative construction materials and methods to overcome the shortcomings of gravel on many of these roads. The Ministry is partnering with Ohio University to research the alternative low-cost materials that require the least investment in maintenance. A total of 200 km of district roads will be surfaced using the new methods or materials. The total estimated cost of this program is \$ 10 million over a five-year period.

- **Paved District Road Rehabilitation Program:** This program is intended to eliminate the rehabilitation backlog of paved district roads and structures through 2023. The program will rehabilitate an estimated 690 km of paved district roads, in addition to different road structures, at an estimated cost of \$ 220 million. NRAP, co-financed by the World Bank and the government, at MPW is currently rehabilitating 260 km of paved district roads and 13 bridges at a cost of about \$ 82.5 million. The work is expected to conclude in 2019. Other district roads and structures to be rehabilitated will be determined as a part of the MPW implementation program with priority for roads that maximize access and economic benefits.

3. Ensure Adequate Road O&M

The estimated cost of the initiative to Improve District Level Access and Connectivity is \$ 272 million from 2019-2023. The cost covers two programs. The District Level Access Improvement program intended to connect all districts without roads, and to develop alternative designs and materials for district roads at a cost of \$10 million. The second is the Paved District Roads Rehabilitation program intended to rehabilitate 690 km of paved roads at a total estimated cost of \$ 220 million.

This strategy is concerned with ensuring adequate maintenance of the SRN. It includes two primary initiatives by type of surface paved and unpaved.

3.1 Paved Roads Maintenance Initiative

The total paved length of the SRN is estimated at 7,649 km, of which 3,249 km National Highways, 1,657 km provincial roads and 2,743 km district roads. This initiative is intended to ensure adequate maintenance of these roads. Interventions under this initiative are divided into three main programs by maintenance type; periodic, routine and emergency maintenance.

Periodic Maintenance Program

After adjustments of the results of the Pavement Surface Evaluation and Rating (PASER) 2015, about 24 percent of the SRN paved roads require maintenance at PASER level (7), 19 percent require maintenance at PASER level (6) 12 percent require

maintenance at PASER level (5), and 20 percent at PASER levels (4) and (3). The total estimated cost for periodic maintenance of paved roads of the SRN was estimated at of \$100 million. These costs are in addition to the costs associated with the ongoing

Road Asset Management Project (RAMP)

The Road Asset Management Project (RAMP) is a \$60 million intervention financed by ADB. The project’s aim is to perform periodic maintenance along the Kabul-Jalalabad highway, which is 140 km long, and the southeastern part of the ring road, about 450 km long. The severe deterioration of the both highways (PASER levels 4 and 5) is due to lack of adequate operation and maintenance, which resulted in the need for full pavement restructuring at an estimated cost of about \$ 103,000 per km. It is worth noting that there are eight bridges on the Kabul-Kandahar highway which are in dire need of rehabilitation due to lack of maintenance and anti-government elements’ attacks. The rehabilitation cost of bridges is estimated at \$ 15 million that is not covered under RAMP, which will be completed in 2019.

RAMP project.

Over the life of this strategy, it can be assumed that an additional 15 percent of the paved length will fall from good to moderate conditions requiring periodic maintenance. This translates into an additional 230 km per year for an estimated annual cost of \$ 9.2 million, or a five-year total cost of \$ 46 million. This brings the total periodic maintenance cost of the paved SRN in Afghanistan to \$146 million over the five-year period, including all backlogs.

To minimize the overall costs associated with road maintenance, MPW calls for allocating more

Pavement Surface Evaluation and Rating (PASER)	
Pavement Surface Evaluation and Rating (PASER) ¹ is a visual survey method for evaluating the condition of the roads. The method was developed by the University of Wisconsin Transportation Information Center. It is a simple, efficient and consistent method for evaluating road condition.	
PASER uses visual inspection of pavement defects, deformations, cracks, potholes and patches to assess the condition of the road. The rating system of PASER is based on a scale from 1 to 10 with 10 being excellent road condition.	
PASER Rating Level	Needed Maintenance
9 and 10	No Maintenance Required
8	Little or no maintenance
7	Routine maintenance, crack sealing and minor patching
5 and 6	Preservative treatments (sealcoating)
3 and 4	Structural improvement and leveling (overlay or recycling)
1 and 2	Reconstruction
As the PASER level drops treatment cost increases. The treatment costs more than double when the condition drops from level (7) to level (6). The costs increase fifteen times when the condition drops from a level (6) to a level (5).	
<small>*Note: State of Michigan. Transportation Asset Management Council (TAMC). http://www.michigan.gov/tamc/0,7308,7-356-82158_82627---,00.html</small>	

maintenance resources at the start of the five years program to overcome the maintenance backlog. In order to be able to secure sufficient financing, MPW will seek assistance from its international development partners.

Routine Maintenance Program

The estimated costs of routine maintenance, PASER levels (10) through (7), of paved roads along the SRN is based on the cost for routine maintenance for about 40 percent of the paved roads in the initial two years of this strategy. The actual lengths requiring routine maintenance will increase over the last three years of the strategy reflecting new construction, rehabilitated or periodically maintained roads. The average annual estimated roads for routine maintenance are 3,900 km.

The total annual routine maintenance cost was estimated based on a unit cost \$1,500 per km. It is estimated that the total five-year routine maintenance cost is \$ 29 million.

Emergency Maintenance Program

Emergency maintenance activities cover engineering or maintenance failure type of emergencies and natural emergencies, including weather.

Through the development of the emergency maintenance risk mitigation system and tools, the risks associated with several types of emergencies due to natural causes will be reduced. These include emergencies due to rock fall, roadside hazards or

inclement weather-related emergencies such as avalanches. In addition, the annual inspection of roads and road structures will reduce the risks associated with structural or improper maintenance type of failures.

Currently, the Salang tunnel receives majority of funding allocated for emergency maintenance to ensure its continued operations during the winter months. It is estimated about \$ 5 million are allocated annually for the Salang Tunnel. The rest of the country's needs is estimated to cost an additional \$ 4 million per annum. The total estimated cost for emergency maintenance from 2019-2023 is estimated at \$ 50 million.

The total estimated costs to adequately maintain the paved roads of the SRN is estimated at \$ 225 million to cover all maintenance backlog and new maintenance works from 2019-2023. This includes an estimated \$ 146 million for periodic maintenance, \$ 29 million for routine maintenance and \$ 50 million for emergency maintenance.

3.2 Unpaved Roads Maintenance Initiative

The estimated length of gravel or dirt roads in Afghanistan is about 10,500 km, including National Highways, provincial roads and district roads. The majority of the unpaved roads are district roads, comprising over 95 percent of these roads.

MPW analyzed the maintenance costs associated with gravel roads and concluded that periodic maintenance of gravel roads is unsustainable for most of these roads. Additionally, given the

Qway-e-Kar: A Complement to the Private Sector

MPW is a strong believer in the private sector and in its impact on the development and O&M of the road sector, whether as a contractor or as a partner. However, it realizes that there are many challenges facing the private sector in Afghanistan today, including the security situation and weak capacities. This results in long delays in project implementation in the road sector.

Given these challenges, and the high costs of construction materials, driven to a great extent by the security situation, MPW is envisaging to complement the private sector by strengthening its Qway-e-kar, an implementing arm of MPW that focuses on periodic and routine maintenance.

Qway-e-kar will not compete with the private sector for contracts, but rather will be funded through government allocations for the implementation of different projects. Its work will proceed in parallel to projects being implemented by the private sector. Such arrangement will help speed up implementation of much needed roadway maintenance in Afghanistan, and it will help reduce the backlog of maintenance activities on the SRN.

To operationalize Qwa-e-kar, GoIRA through MPW has allocated \$ 6 million for its establishment. These funds will be used to adequately equip Qway-e-kar and develop the systems required for its operations, including monitoring and controls. Further, MPW has already structured Qway-e-kar in its transitional structure. It also has established the required mechanisms to ensure its efficient operations with adequate controls for accountability.

Working together, Qway-e-kar and the private sector will ensure that the SRN of Afghanistan is adequately maintained.

environmental impacts associated with re-graveling and the limited impact it has due to quality of gravel and the weather conditions, MPW concluded that re-gravelling is an option that should be judiciously used in Afghanistan at this time.

Currently, MPW is assessing several options related to sealing of some graveled roads, and piloting different types of construction material and methods for low volume roads. Should other options prove feasible, MPW will proceed with the developing maintenance programs specific to low volume roads.

In the meantime, MPW's focus on gravel and dirt roads is to ensure that they are traversable and

safe. Therefore, MPW's maintenance initiative for unpaved roads will focus on routine maintenance of these roads by ensuring their continued safe operations. Thus, only a small provision will be made at this time to re-gravel some of the more important roads. The program will be implemented in partnership with Ohio University.

Unpaved Roads Routine Maintenance Program

Based on an estimated cost of \$ 500 per km per year for routine maintenance of unpaved roads, MPW estimates that the total annual maintenance program of unpaved roads is \$ 6 million. The total cost of the program from 2019-2023 is, therefore, estimated at \$ 30 million and will be implemented through micro-enterprises and Community

Development Councils (CDCs), whichever more feasible.

The program is expected to employ about 2,100 skilled and unskilled laborers annually, and will be implemented at the provincial level through Community Development Councils (CDCs) and or direct hires.

Unpaved Roads Periodic Maintenance Program

Provisions to re-gravel some of the more important sections of unpaved roads were made to ensure adequate operations until a more sustainable solution can be found and implemented. This program allocates \$ 5 million per year to cover 300 km per year of gravel roads. The total five-year cost of this program is \$ 25 million.

To ensure adequate maintenance of the SRN, an estimated \$ 280 million are required over the five-year period from 2019-2023. These costs include \$ 225 million for the annual routine, periodic and emergency maintenance of paved road, in addition to eliminating the existing maintenance backlog. They also include \$ 11 million annual maintenance program of unpaved roads for a total of \$ 55 million.

Improve Road Safety

Road safety is a multi-disciplinary field requiring the involvement of wide array of expertise and agencies. While it is an essential indicator of the quality of the road network, road safety did not receive much focus from MPW or the international development partners. This is due to the concerns for the development of the SRN and its O&M.

Afghanistan is losing around \$ 746 million because of poor road safety.

This strategy intends to be the starting point for ensuring that road safety is a priority that needs to be adequately and efficiently addressed. It includes two primary initiatives to help improve road safety in Afghanistan. The following is a summary of these initiatives.

1. Adequately Mitigate High Risk Hazardous Locations

The road safety function was structured in the transitional structure of MPW. The systems related to road safety will be developed as discussed under the initiative of, "Building the Institutional Capacity of MPW." This initiative is concerned with implementing road safety measures including benchmarking the road safety conditions through a road safety audit and the development and implementation of road safety mitigating measures. The following is a summary of the two interventions under this initiative.

1.1 Road Safety Audit

Afghanistan has not had a road safety audit, nor does it have an adequate system for accident data collection and management. This intervention involves conducting the first road safety audit of the SRN in Afghanistan. The results of the audit will be used in the development of mitigating measures program for MPW.

1.2 Annual Road Safety Mitigation Measures Program

The road safety audit of the SRN will benchmark the existing road safety hazards along the SRN. MPW will use these results to develop an annual road safety mitigating measures program for implementation.

To ensure improvement of the road safety conditions of the SRN, until the safety audit is concluded, MPW estimates the annual minimal requirement for the implementation of the program at \$ 4 million, or, on average, \$120,000 per province. The five-year total cost of the program is estimated at \$ 20 million.

The total cost of the initiative to, "Adequately Mitigate High Risk Hazardous Locations," along the SRN is estimated at \$ 20 million for the five-year period to cover the minimal costs estimated for implementation of the annual mitigating measures programs. This is in addition to the costs covered under the Expansion of Scope of RAMS for the first road safety audit of the SRN, which will be carried out in 2019.

2. Adopt a Holistic Approach to Road Safety

There are different variables that impact road safety. These may be characterized as road, road user, and vehicular variables. The mitigating measures program will address the road impacts on road safety. This strategy is concerned with addressing some of the vehicular and road users' related variables. It includes two initiatives, one geared towards vehicular related variables, and the

other towards road users. The following is a summary of the initiatives.

2.1 Improve Vehicular Safety

Vehicular variables are the cause of about 5 percent of all road accidents. The inspection of



vehicles can improve the safety of the roads, as mechanically inadequate vehicles are not allowed on the roads. This initiative, which is not under MPW mandate but included in the strategy as a part of the holistic approach to road safety, has one program for the Mechanical Inspection of Vehicles. It is concerned with developing the vehicle inspection in Afghanistan. It includes provisions for pre-licensing inspection and random field inspections.

The pre-licensing inspection would be developed in conjunction with the sticker initiative currently being developed by MPW. It includes the equipping of 5 centers for pre-licensing inspection in Afghanistan. The project will be discussed whether it should be implemented by MPW or another government institution.

The initiative will also include provisions for the training and equipping of field inspection teams to conduct seasonal random inspection of vehicles. MPW, MoT and MoI will implement activities related to field inspections. The expected cost of the program is \$ 2.5 million with expected conclusion in 2020.

2.2 Improve Road Users' Safety

Whether driver, rider or a pedestrian, almost all people are road users. Human factors account for majority of road accidents, whether as drivers or pedestrians. Therefore, public awareness is an essential component of any road safety strategy. This initiative includes two programs:

Public awareness and outreach

This program consists of two components: one focuses on school-aged children, while the other is geared towards the general public.

MPW will work with the Ministry of Education (MoE) to develop road user safety material to improve awareness of school children. The other component will develop media campaigns for road safety to include, TV, radio, road advertisement and social media.

MPW estimates the cost of the program at about \$ 1.50 million for the five-year period.

Enforcement Program

Police enforcement is an instrumental aspect that affects drivers' behavior. Adequate enforcement of traffic regulations ensures compliance and discourages dangerous behavior. This program is

geared towards enhancing police enforcement with focus on vehicle and driver licensing, in addition hazardous driving behavior.

The program, which will be primarily implemented by the police, in cooperation with MPW, involves random police check points for the purposes of ensuring vehicular and driver licensing. No additional funds are envisaged for the implementation of this program.

Three programs will be implemented as a part of MPW's strategy to, "Adopting a Holistic Approach to Road Safety." The total cost of the three programs is estimated at \$ 4 million over the five-year implementation period.

Summary of Strategy Interventions

Goal I: Ensure Road Investment Sustainability

Strategy	Initiative	Intervention	Cost (Million)	
			\$	Afs
Build the Professional & Institutional Capacities of MPW	Develop the Regulatory Framework	National Transport Sector Strategy	Inc. ²	
		Transport Sector Law and Regulations		
	Improve Organizational Structuring of MPW & Inter-Agency Coordination	Complete the Structural Transition of MPW	Inc.	
		Develop Inter-agency coordination Mechanisms		
	Develop Systems for Specialized Functions at MPW	Develop Specialized Technical Functions	13	
		Develop Specialized Support Functions	1nc.	
	Build the Professional Capacity of MPW Staff	Train MPW Staff in Specialized Systems	Inc.	
		Build General and Specialized Skills at MPW	0,25	
	Improve the work environment at MPW	Rehabilitate and Equip MPW	2	
		Construct New Office Building for MPW	10	
Improve Financial Sustainability of the Road Sector	Improve Government Financing of the road sector	Develop policy recommendations for road fees and taxes	3	
		Implement identified revenue generating initiatives		
	Public Private Partnerships in the Road Sector	Develop the regulatory and institutional framework for PPP	5	
		Identify and implement pilot PPP initiatives		
Subtotal Ensure Road Investment sustainability (\$)			33.25	

² Cost included as a part of another intervention.

Goal II: Improve Road Network Access and Coverage

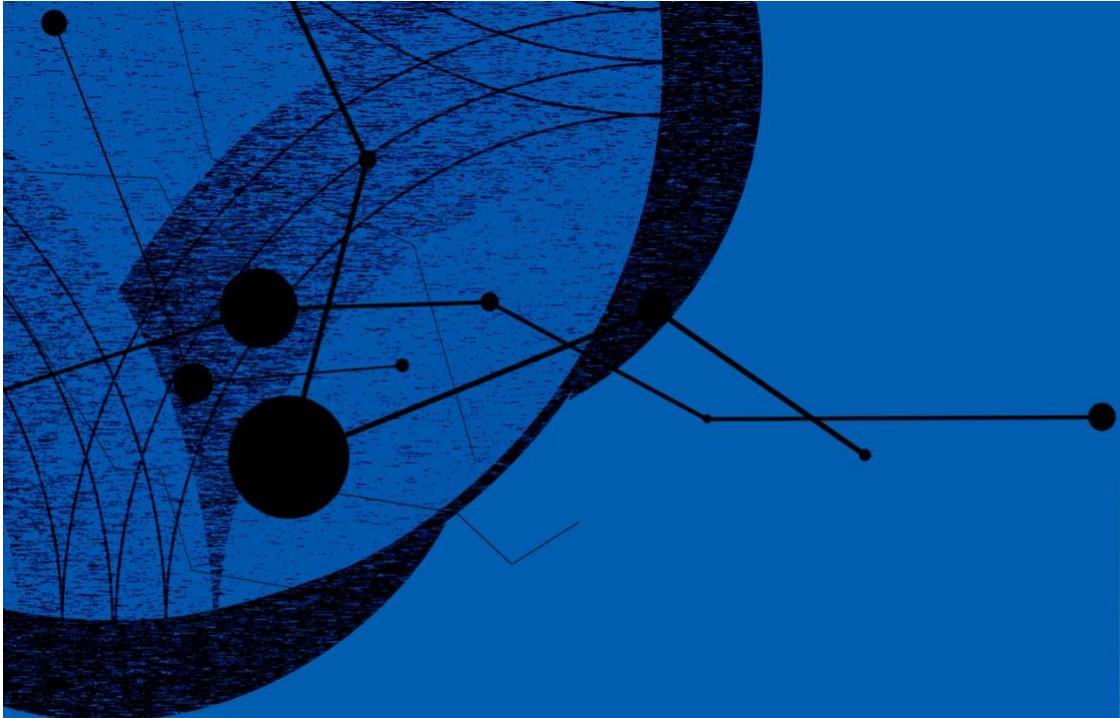
Strategy	Initiative	Intervention	Cost (Million)	
			\$	Afs
Strengthen Afghanistan's Economic "Primary Trade" Corridors	National Highways Connectivity and Access	Completion of the Ring Road	700	
		East-West Corridor	530	
		North-South Corridor-Kandahar to Mazar-e-Sharif	550	
		Kabul - Jalalabad Road (Bagrami-Sapary-Sorkhrod)	150	
		Feasibility study & design of North-South Corridors (Jawzjan to Nimroz/Yakawlang-Kandahar/Lashkargah-Bahramchah)	15	
		Feasibility study for the Kabul-Torkham Highway	5	
		National Highway & International Connections Rehabilitation Program	420	
		National Highway Rest Area Program	10	
	Congestion Mitigation Initiative	The Herat Bypass	12	
		The Kabul Ring Road	540	
		Urban Bypass Development Program Development	20	
		Bamyan to Baghlan Road and Salang Road & Tunnel Rehabilitation	250	
		New Salang Tunnel Feasibility study	20	
	Enhance Sub-National Connectivity and Access	Provincial Road Development	Provincial Road Construction and Upgrade Program	210
Provincial Road Rehabilitation Program			87	
Improve District Level Access and Connectivity		District Level Access Improvement Program	52	
		Paved District Roads Rehabilitation	220	
Ensure Adequate Road O&M	Paved Road Maintenance	Periodic Maintenance Program	146	
		Routine Maintenance Program	29	
		Emergency Maintenance Program	50	
	Unpaved Road Maintenance	Unpaved Road Routine Maintenance Program	30	
		Unpaved Road Periodic Maintenance Program	25	

Subtotal Improve Road Network Access and Coverage (\$)			4,071	
Goal III: Enhance Road Safety				
Strategy	Initiative	Intervention	Cost (Million)	
			\$	Afs
Adequately Mitigate High Risk Hazardous Locations	Road Safety Audit	Conduct a SRN Safety Audit	Inc.	
	Annual Road Safety Mitigation	Develop & Implement Annual Road Safety Mitigating Measures Program	20	
Adopt a Holistic Approach to Road Safety	Improve Vehicular Safety	Vehicle Inspection Program	2.5	
	Improve Road Users' Safety	Public Awareness and Outreach	1.50	
		Enforcement Program	Inc.	
Subtotal Enhance Road Safety (\$)			24	

Summary of MPW Strategy Cost by each Goal

Goal	Estimated Cost (Million)	
	\$	Afs
Ensure Sustainable Road Investment	33.25	
Improve Road Network Access and Connectivity	4,071	
Enhance Road Safety	24	
Total Cost	4,128.25	

The total cost of the MPW 2019-2023 Strategy over its 5-year timeframe is estimated at about \$4.1 billion.



Update of Strategic Plan



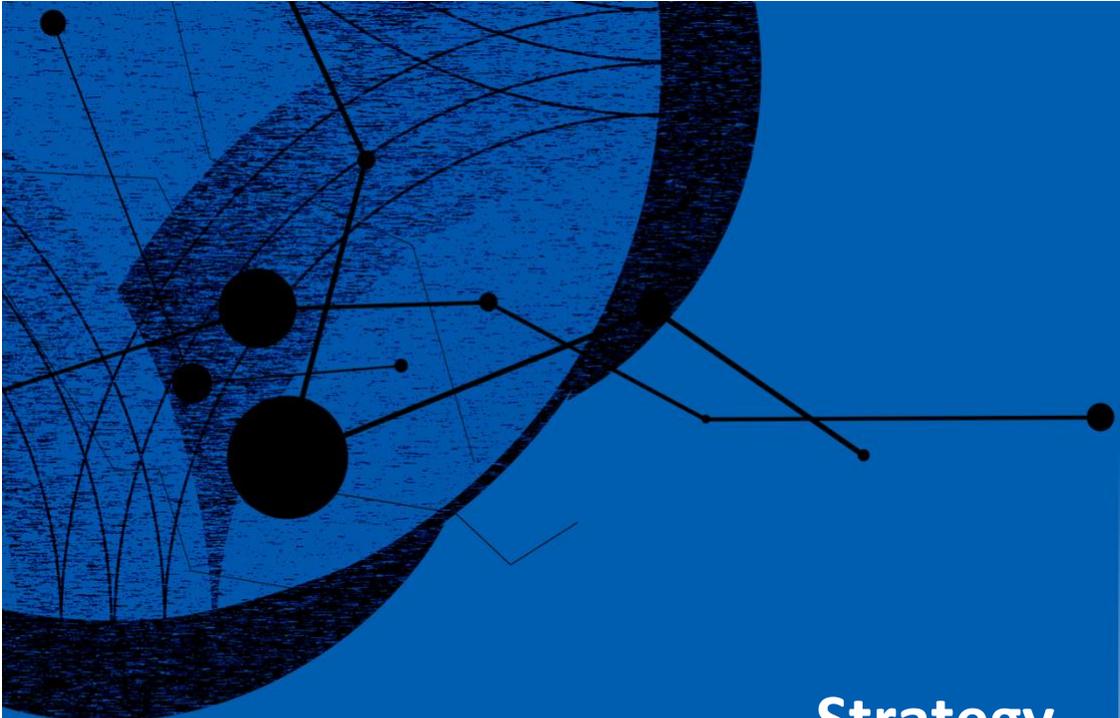
Update of the Strategic Plan

MPW is currently undergoing a process of reform and transition. It is expected that within two years this transition will conclude. Further, the current state of existing road data related to both lengths and conditions, and more so related to road structures, requires in depth and thorough attention. MPW is in the process of developing the necessary systems and shall within two years conclude all related work to ensure adequacy of data for planning purposes.

The planning timeline presented in this strategy 2019-2023 is indicative. It is defined with the aim to structure and enable the development and improvement requirements of the SRN in line with the requirements of good practice to define future directions and guide implementation.

Realizing this shortcoming that may be affecting different components of the strategy, MPW shall review and refine this strategy at the two-year mark.





Strategy Implementation Mechanism

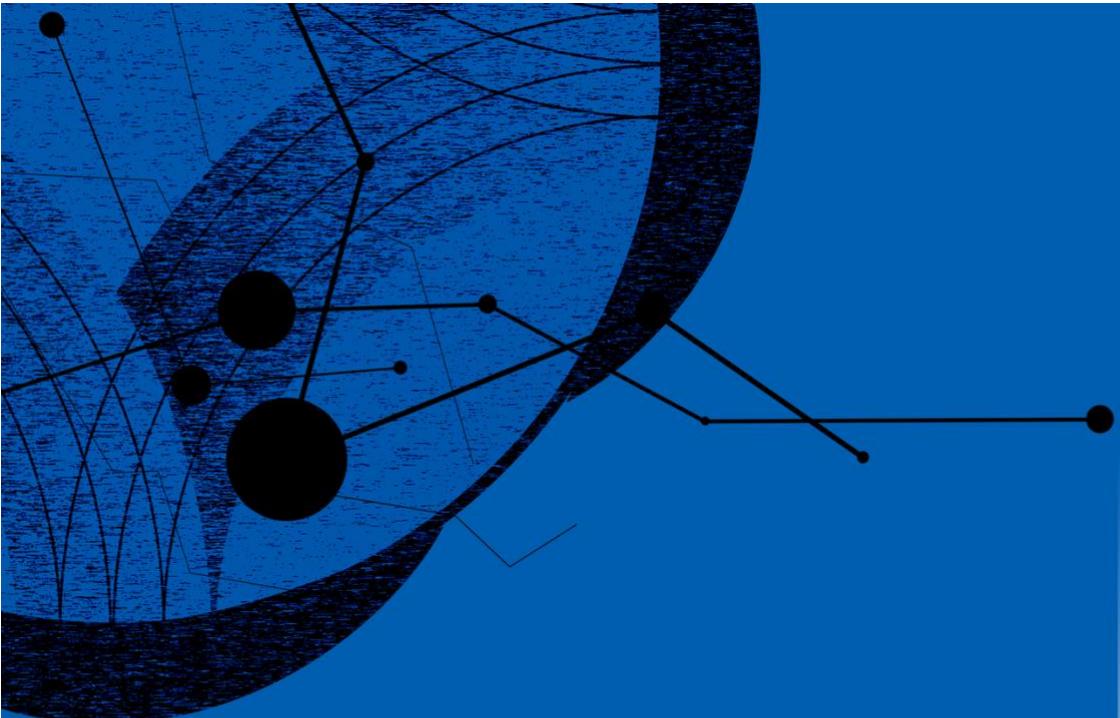
- MPW 2019-2023 Monitoring & Evaluation (M&E) Framework

MPW 2019-2023 Monitoring & Evaluation (M&E) Framework

Goal	Strategy	Initiative	Intervention	Indicator	Target	
Ensure sustainable Road Investment	Build the Human and Institutional Capacity of MPW	Develop the regulatory framework	The National Transport Sector strategy	Number of mandates of transport sector agencies	New mandates defined for 6 agencies	
			Transport Sector Law and regulations	Number of laws and regulations	One law and 5 regulations	
		Improve organizational structuring of MPW & inter-agency coordination	Complete the transitional structuring of MPW	Number of transitionally structured functions are restructured	Four functions re-structured	
			Develop inter-agency coordination mechanisms	Number of coordination mechanisms established	Four main mechanisms developed with partners	
		Develop systems for specialized MPW functions	Develop systems for specialized technical functions	Number of specialized technical systems developed	Seven technical systems	
			Develop systems for specialized support functions	Number of specialized support systems developed	Three specialized support systems	
		Build the capacity of MPW staff	Provide specialized systems' training	Percent of MPW staff receive training	80 percent	
			Develop general & specialized skills of MPW staff	Number of trained staff	400 with 20 % women	
	Improve financial sustainability of the road sector	Improve financing of the road sector	Develop national policies related to road fees and taxes	Number of policy decisions formulated	Three policy decisions	
			Support implementation of revenue generating initiatives	Number of initiatives implemented	Two initiatives	
		Public Private Partnership	Develop regulatory and institutional framework	Number of laws and tools developed	One law, one regulation and one tool	
			Identify & implement PPP initiatives	Number of initiatives implemented	Two PPP initiatives	
	Improve road network access & connectivity	Strengthen Afghanistan's primary economic and trade corridors	National Highway Connectivity and Access	Completion of the Ring Road	Number of KM constructed	233 km
				East-West Corridor	Number of KM constructed	440 km
The North-South Corridor-Kandahar to Mazar-e-Sharif				Number of KM constructed	520 km, of which 360 km new and 160 km rebuild	
Kabul –Jalalabad Sapary Road				Number of KM constructed	150 km	

Goal	Strategy	Initiative	Intervention	Indicator	Target
			Feasibility & Design of North-South Corridor- Jawzijan to Nimroz	Number of KM of feasibility and design	649
			National highway and international connection rehabilitation program	Number of KM rehabilitated	930 km
		Congestion Mitigation Initiative	The Herat Bypass	Number of KM constructed	25 km
			The Kabul Ring Road	Number of KM constructed	117 km
			Bamyan to Baghlan Road and Salang road & tunnel Rehab	Number of KM constructed and Number of KM rehab.	164 km constructed and 930 km rehabilitated
			New Salang Tunnel Feasibility and Design	Number of alternative Tunnels of feasibility	Three alternatives with one design
		Enhance Subnational Connectivity	Provincial Road Development	Provincial Road Construction and Upgrade Program	Number of KM constructed or rehabilitated
	Provincial Road Rehabilitation Program			Number of KM constructed or rehabilitated	280 km rehabilitated
	Improve District Level Access and Connectivity		District Level Access Improvement Program	Number of districts district roads	0
				Number of KM paved with new material or methods	200
			Paved District Roads Rehabilitation	Number of KM rehabilitated	690
	Ensure Adequate Road O&M	Paved Road Maintenance	Periodic Maintenance Program	KM PASER Level 7 maintained	1,270
				KM PASER Level 6 maintained	1,000
				KM PASER Level 5 maintained	640
			Routine Maintenance Program	KM PASER levels 8 to 10 maintained annually	3,900
			Emergency Maintenance Program	No of days Salang Tunnel Closed per year	Less than 3 days
				Number of days any SRN road is closed per year	Less than 3 days
Unpaved Road Maintenance		Unpaved Road Routine Maintenance Program	Percent unpaved roads maintained annually	Not less than 90 percent	

Goal	Strategy	Initiative	Intervention	Indicator	Target
			Unpaved Road Periodic Maintenance Program	KM of unpaved roads re-graveled	1,500
Enhance Road Safety	Adequately Mitigate High Risk Hazardous Locations	Road Safety Audit	Conduct a SRN Safety Audit	Defined Safety Indicators	Benchmarks for SRN safety Conditions
		Annual Road Safety Mitigation	Develop & Implement Annual Road Safety Mitigating Measures Program	Number of annual programs developed	4
	Adopt a Holistic Approach to Road Safety	Improve Vehicular Safety	Vehicle Inspection Program	Number of vehicular inspection centers established	5
				Number of annual field inspection campaigns	4
		Improve Road Users' Safety	Public Awareness and Outreach	Number of annual media & advertising campaigns	2
				Number of students reached per year	5,000
			Enforcement	Number of unlicensed vehicles at end of 5 years	No more than 0.1 percent of all vehicles



Annexes

- Annex I: Results of the SWOT Analysis for the Development of MPW 2019-2023 Strategy
- Annex II: Transitional Organizational Structure of MPW

Annex I: Results of the SWOT Analysis for the Development of MPW 2019-23 Strategy

Component	Strengths	Weaknesses	Opportunities	Threats
Physical Road Network	<ul style="list-style-type: none"> ▪ Major portions of the network are constructed ▪ Unpaved opened roads afford access and cheaper to upgrade ▪ Strong national and international connections ▪ Most major centers are adequately connected to National Highways ▪ Majority of provinces have access to provincial roads ▪ Majority of districts have access to district roads 	<ul style="list-style-type: none"> ▪ Weak connectivity arises from incomplete network, especially at the national and district levels. ▪ Unpaved roads require high maintenance and hinder efficiency, especially along national and provincial roads. ▪ Lack of adequate road maintenance resulted in large deterioration of the network and a large backlog of reconstruction and periodic maintenance requirement. ▪ Bottlenecks along the national highways near major urban centers or at the Salang Tunnel create congestions, delays and inefficiencies. ▪ Some districts have no access to district roads, while some provinces have no access to provincial roads. 	<ul style="list-style-type: none"> ▪ Donor financing supports development ▪ Excellent location along international trade routes 	<ul style="list-style-type: none"> ▪ Existing financing is insufficient to ensure development and O&M. ▪ Contracting delays substantially increases time from design to construction ▪ The continued unstable security situation delays project implementation ▪ Quality of materials and construction causes faster deterioration of roads. ▪ Cost of construction material in Afghanistan hampers development. ▪ Insufficient national financing of the road sector ▪ Resettlement requirement for families and communities along certain routes. ▪ Environmental impact associated with road construction and heavy use of gravel pits.
Road Safety	<ul style="list-style-type: none"> ▪ Availability of sufficiently developed GIS system and maps to support a road safety audit. 	<ul style="list-style-type: none"> ▪ Road safety has not been a primary issue for the donors or MPW. ▪ The existing road safety conditions are unknown. ▪ Safety audit was not done in Afghanistan. ▪ Accident data are not adequately collected or managed. ▪ Road safety planning, design and mitigation are almost non-existing. 	<ul style="list-style-type: none"> ▪ Donor financing supports development. ▪ Availability of multi-lateral funds. ▪ Minor police related accident reports and enforcement measures. ▪ Availability of international best practice of relevance to the region including Afghanistan. 	<ul style="list-style-type: none"> ▪ A multi-disciplinary field requiring high coordination effort amongst different agencies. ▪ May not be considered a funding priority. ▪ Difficult police enforcement ability along many parts of the SRN. ▪ No mechanical pre-licensing inspection of vehicles is done. ▪ Public awareness and outreach programs are inadequate.

Component	Strengths	Weaknesses	Opportunities	Threats
Institutional and Capacity	<ul style="list-style-type: none"> ▪ A transitional organizational structure was developed establishing better controls, more efficient and effective operations. ▪ The zones as subnational administrative layers have been established. ▪ Job descriptions related to the transitional structures and new systems were developed. ▪ Specialized RAMS and road design & project supervision systems under developed. ▪ Road O&M functions were developed for Qway-e-kar and Qway-e-kar was established ▪ MPW owns its buildings and many lands ▪ MPW owns large amount of heavy vehicles and machines ▪ MPW owns several gravel quarries and asphalt plants 	<ul style="list-style-type: none"> ▪ Very weak regulatory framework. ▪ Transitional organizational structure requires update to cover structures of specialized units. ▪ Many specialized systems and tools are either incomplete or outdated ▪ Human resource capacity and skills are not in line with the new requirement of reform ▪ Coordination and communication mechanisms area weak ▪ Inadequate registry of assets. ▪ Inadequate O&M of vehicles and equipment. ▪ Inadequate maintenance of buildings. 	<ul style="list-style-type: none"> ▪ Donor financing supports Capacity and Institutional development ▪ Strong highly educated expat community. ▪ Availability of international expertise ▪ Strong political commitment for reform. ▪ Modern Information & Communication Technology enables better coordination between and with agency 	<ul style="list-style-type: none"> ▪ Fragmentation of road sector related functions impacts efficiency, effectiveness and dilutes authority ▪ Security conditions hamper data collection efforts

Annex II: Transitional Organizational Structure of MPW

