DISASTER MANAGEMENT PLAN

DEPARTMENT OF TRANSPORT

GOVERNMENT OF HIMACHAL PRADESH

CONTENTS

1. INTRODUCTION

1.1 ABOUT THE DEPARTMENT

As Himachal Pradesh has a hilly terrain, road transport is the only source of transportation in the state. It has a key role in the balanced regional development and harnessing the growth potentials of each and every sector of Himachal Pradesh. The Government of Himachal Pradesh has established Department of Transport on 2nd October 1974. This department has been playing a vital role in the expansion of transport facilities for the public in the state which functions under the provision of section 213 of Motor Vehicle Act, 1988. All matters related to registration of motor vehicles, registration of vehicles issuance of permits, fitness certificates, issuing driving licenses and adherence to pollution norms (as specified under the Motor Vehicles Act 1988 and the rules therein) deposition and recovery of Motor Vehicle Taxes and enforcement of Motor Vehicles Act and Rules are handled by the Transport Department and the Regional Transport Authorities set up by the Department. It also assists other organization in the development of transport facilities and endeavours to provide efficient, adequate and economic transport services for the movement of passengers and goods by road.

The main missions of the transport department include providing mobility with choice, comfort, convenience, frequency, safety and minimal environmental effects. While the topmost priority will be accorded to providing access facilities, efforts will be made to provide a range of transport facilities like buses, cabs, maxi cabs, auto rickshaws and goods carriers with varying range of load capacity and sizes to provide the maximum choice to the consumers and promote competition to maintain cost effectiveness of services. It shall also be the endeavour of the department to promote alternate modes of transport like water transport.

1.2 ORGANIZATION STRUCTURE

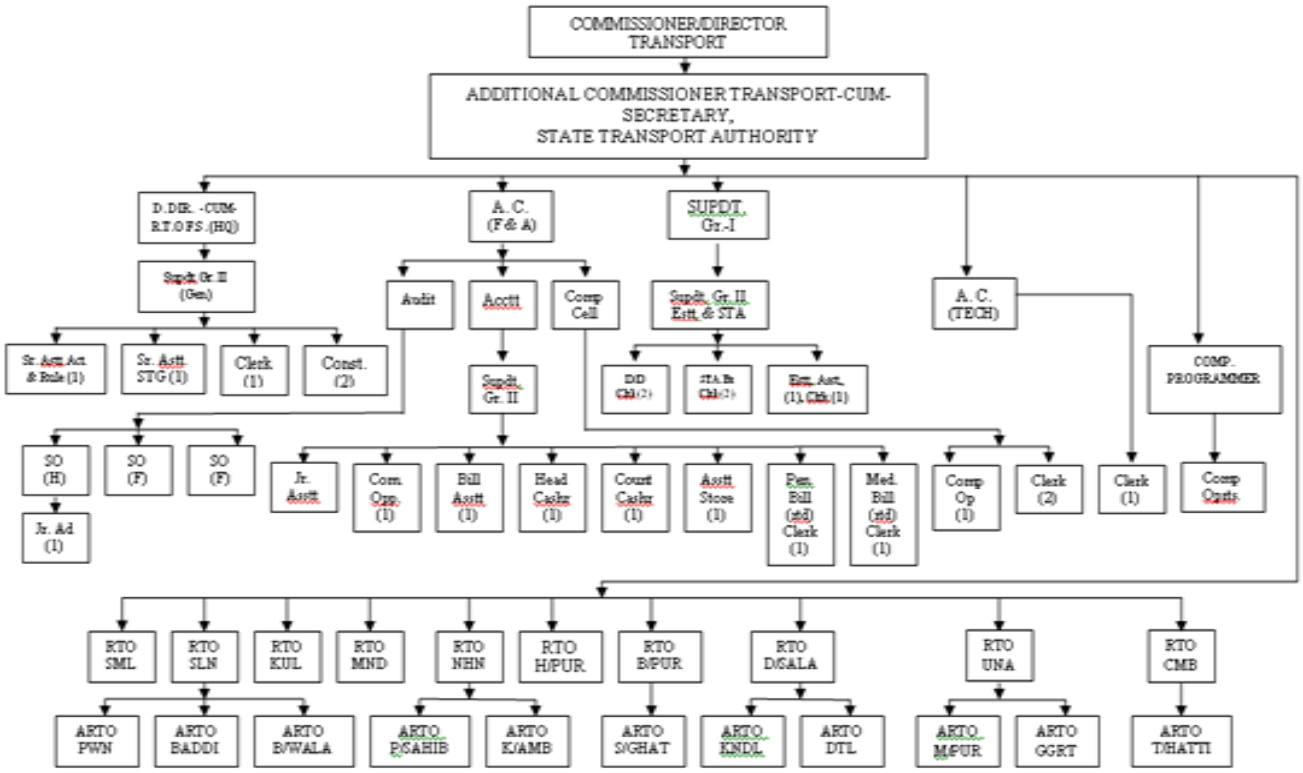


Figure .1.1 Organizational Hierarchy of transport department

The Transport Department is headed by the Director Transport who is the administrative Head of Department in the State. He is responsible for the efficient working of Transport Department and shall exercise all administrative and financial powers as adjoined upon the heads of the department in the Himachal Pradesh Government. He is assisted by an Additional Transport Commissioner, a Joint Transport Commissioner, and one Accounts Officer in the head office. In the field, the Director is assisted by 12 Regional Transport Officers, 3 Regional Transport officers (Flying) and 12 Assistant Regional Transport Officers.

The state transport department mainly functioned under12 Regional Transport Offices and 3 flying squads division. List of Regional Transport Offices Situated in the District Headquarters in Himachal Pradesh is given below:

#	Name of Office	Jurisdiction
1	Shimla	Shimla & Kinnour
2	Solan	Solan
3	Nahan	Sirmour
4	Bilaspur	Bilaspur
5	Mandi	Mandi
6	Kullu	Kullu&Spiti
7	Hamirpur	Hamirpur
8	Una	Una
9	Dharamshala	Kangra
10	Chamba	Chamba
11	Baddi	Baddi & Nalagarh
12	Nurpur	Nurpur
Flying Squads		
1	Head Quarter	All H.P.
2	Kullu	Kullu, Mandi, Bilaspur, L&S
3	Dharamshala	Kangra, Hamirpur, Una, Chamba

1.3 PURPOSE OF THE PLAN

The overall aim of transport disaster management plan is to make the transport sector in the state resilient enough to deal with any unlikely events. The overall vision for the state is that “Himachal Pradesh has an integrated, safe, accident-free and sustainable transport system”. Thus provides a safe transport system that is increasingly free of transport-related deaths and serious injuries. The plan will also provide guidance to offices as well as stakeholders within the Transport Department to manage the risks of disasters before, during and after a disaster.

The objectives of this plan are to facilitate the Transport Department in the following:

- Assessment of the sectoral and departmental risks of disasters in Transport Department
- Assigning role and responsibilities for various tasks to be performed by the department in accordance with the State DM Policy and State DM Plan
- Undertaking measures proposed for strengthening capacity-building and preparedness of all stakeholders of the transport sector
- Undertaking measures for mitigating the existing risks of disasters particularly in road related accidents and disaster to transport sector
- Prevention of creation of new risks of disasters particularly road accidents
- Undertaking preparedness measure of the various magnitude of road accidents
- Mounting prompt and coordinated response at various levels.

1.4 SCOPE OF THE PLAN

It has been identified that transport department is the prime agency in managing road accidents. It has nodal responsibilities for dealing any situation of road accidents. In the event of a major disaster or accidents in the roads, managing the situation becomes a major activity. Hence the scope of disaster management plan prepared by the transport department mainly concentrates on the activities for dealing various magnitude of road accidents. The State Disaster Management Plan has defined the role of the Department of Transport as the primary agency for the following activities:

Emergency Support Function	Primary Agency	Responsibilities of Primary Agency	Activities for Response
Transport	Department of Transport	Overall coordination of the requirement of transport; Make an inventory of vehicles available for various purposes;	Coordinate arrangement of vehicles for transportation of relief supplies from helipads / airports to the designated places;
		Coordinate and implement emergency related response and recovery functions, search and rescue and damage assessment	Coordinate arrangement of vehicles for transportation of SAR related activities.

1.5 AUTHORITIES, CODES, AND POLICIES

The Government of HP made its first attempt in terms of a transport policy in 2004 wherein a comprehensive transport policy was launched for the state by the Department of Transport, Govt. of Himachal Pradesh. It provides state of the art transportation facilities to the travelling public with high standards of comfort and safety. The key objectives of the policy are listed below:

- Provide connectivity to the remotest corner of the state enabling people to access services and facilities including markets for their farm produce
- Encourage most modern state of art goods transport vehicles entering the market for handling the farm and non-farm produce most efficiently and cost-effectively for achieving export-oriented growth

- Mainstream Road safety concerns in the overall transport planning by bringing all the concerned departments on board
- Reduce environmental externalities of transport in Himachal Pradesh by developing suitable tax and non-tax incentives and disincentives that encourage environment friendly transport and discourage polluting and unsafe vehicles
- Alternate modes of transport like cable cars, trams and non-mechanized modes will be encouraged to achieve sustainable transport development over time.

The Transport department functions under the provision of section 213 of Motor Vehicle Act, 1988. It has been primarily established to enforce the provisions of the motor vehicle Act 1988, Central Motor Vehicle Rules, 1989, Himachal Motor Vehicle Rules, 1999, HP Road Infrastructure Protection Act, 2002, HP motor Vehicles rules, 1999, Fatal Accidents Act, 1855, public liability Insurance Act, 1991.

1.6 INSTITUTIONAL ARRANGEMENTS FOR DISASTER MANAGEMENT

1.6.1 NODAL OFFICER

Additional Commissioner Transport, Himachal Pradesh acts as the nodal officer of Disaster Management and road safety in the state.

1.6.2 ROAD SAFETY COUNCIL

Road safety is the major concern of transport department of the state and various steps have been taken to ensure safe and comfortable transport facilities for the people of the state. In this regards the State Road Safety Council has also been constituted and is headed by the Transport Minister.

1.6.3 ROAD ACCIDENT DATA MANAGEMENT

Himachal Pradesh is the first State in India where the Road Accident Data Management System was launched and implemented successfully for scientifically analysing the accident data. Remedial actions are being taken for reduction of accidents as well as fatalities. The system is functioning smoothly in the State. In order to collect data from field staff, 238 tablets have been distributed to all Police Stations and Police Posts which are GIS-based computerised software system for accident data recording, storage, analysis and dissemination. Short term action plan for the year 2017-18 to 2019-20 and long terms strategy for seven years have been prepared to address the factors causing fatalities and accidents.

1.7 PLAN MANAGEMENT (MONITORING, REVIEW AND REVISION)

The Department of HRTC will ensure the implementation monitoring, review and revision of the Disaster Management Plan**.**

1.7.1 IMPLEMENTATION AND MONITORING

The nodal officer, Additional Transport Commissioner, Himachal Pradesh, will have the overall responsibility for implementation of all the activities related to disaster management

1.7.2 REVISION OF THE PLAN

The Disaster Management Plan is a living document. It will be revised on annual basis as per provisions of the DM Act-2005. Any changes in guidelines under the NDRF and SDRF shall be incorporated in the plan as and when such changes are made. The introduction of new technology for hazard risk mitigation shall also be incorporated as when the same is tested and found feasible and acceptable in particular geographical area of the State.

1.7.3 SYSTEM OF UPDATION

The document shall be updated at the Directorate level with the help of State Disaster Management Authority at least once in a year or as per the requirement. Consultations will be held with the stakeholders for making changes in the Plan. The Nodal Officer shall be responsible for holding consultations and updating the Plan.

1.7.4 DISSEMINATION OF PLAN

After finalization of the Plan, a copy will be submitted to the HPSDMA for approval. After approval, it shall be disseminated to all agencies, field offices and other stakeholders. Disaster Management Plan will be uploaded on the website of Directorate of Women and Child Development. Further, whenever it revised/updated, it shall be submitted to HPSDMA for endorsement of changes. The revised Plan shall be shared with all concerned.

2. HAZARD RISK VULNERABILITY ASSESSMENT

2.1 RISK VULNERABILITY PROFILE OF HIMACHAL PRADESH

Himachal Pradesh is a mountainous state situated in the western Himalayas with an elevation ranging from 350 meters to 6000 meters. Thus, there is a great variation in the geo-climatic conditions of the state due to the extreme variation in the elevation. The climate varies from hot and sub-humid tropical in the southern tracts to cold, alpine and glacial in the northern and eastern mountain ranges with increasing elevation. These conditions make the state prone to various hazards both natural and manmade. The fragile ecology and geology of the State coupled with large variations in physio-climate conditions render it vulnerable to vagaries of nature in one way or the other. It is vulnerable to 25 out of 33 types of hazards identified by the High Powered Committee (HPC) of Government of India, categorized into 5 sub-groups:

Water and Climate-Related Disasters:

1. Floods
2. Hailstorm
3. Cloud Burst
4. Heat Wave and Cold Wave
5. Snow Avalanches
6. Droughts
7. Thunder and Lightning

Geologically Related Disasters:

1. Landslides and Mudflows
2. Earthquakes
3. Dam Failures / Dam Bursts

Chemical, Industrial and Nuclear:

1. Chemical and Industrial Disasters
2. Nuclear Disasters

Accident Related Disasters:

1. Forest Fires
2. Urban Fires
3. Major Building Collapse
4. Serial Bomb Blasts
5. Festival related disasters
6. Electrical Disasters and Fires
7. Air, Road and Rail Accidents
8. Boat Capsizing
9. Village Fire

Biologically Related Disasters:

1. Biological Disasters and Epidemics
2. Pest Attacks
3. Cattle Epidemics
4. Food Poisoning

The districts of Chamba, Kinnaur, Kullu and part of Kangra and Shimla fall in very high vulnerable risk (Figure 1). Similarly, districts of Kangra, Mandi, Una, Shimla and Lahaul and Spiti fall in high vulnerable risk status. The district Hamirpur, Bilaspur, Solan and Sirmour falls in moderately vulnerable risk status. The disaster management strategies and infrastructure required to be evolved by taking the factor of vulnerability into consideration.

Any certain hazard which adversely impacts the state and its inhabitants will also be threatening to the sector of Transport. Some of the hazards are discussed below:

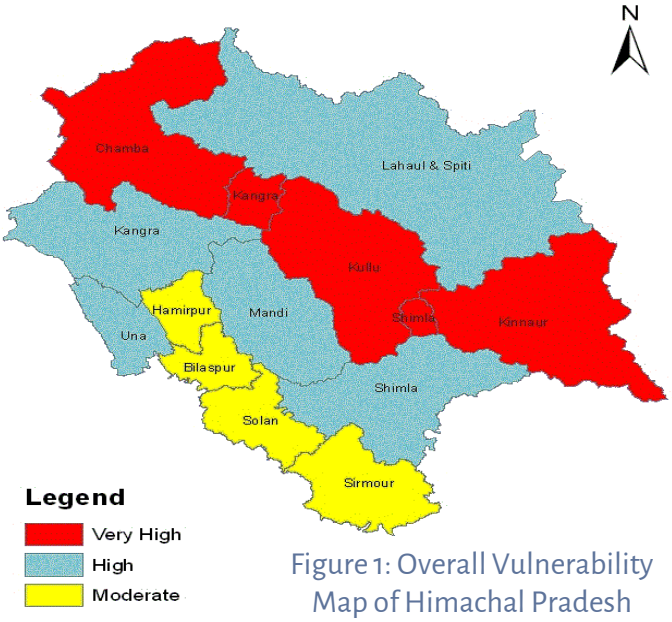


Figure 1: Overall Vulnerability Map of Himachal Pradesh

1.1.1 EARTHQUAKES

Himachal Pradesh is seismic sensitive state as over the years a large number of the damaging earthquake has struck the state and its adjoining areas. Large earthquakes have occurred in all parts of Himachal Pradesh, the biggest being the Kangra earthquake of 1905. The Himalayan Frontal Thrust, the Main Boundary Thrust, the Krol, the Giri, Jutogh and Nahan thrusts are some of the tectonic features that are responsible for shaping the present geophysical deposition of the state. Chamba, Kullu, Kangra, Una, Hamirpur, Mandi and Bilaspur Districts lie in Zone V i.e. very high damage risk zone and the area falling in this zone may expect earthquake intensity maximum of MSK IX or more. The remaining districts of Lahaul and Spiti, Kinnaur, Shimla, Solan and Sirmour lie in Zone lV i.e. the areas in this zone are in high damage risk with expected intensity of MSK VIII or more.

1.1.2 LANDSLIDES

Landslides are one of the key hazards in the mountain regions particularly in the state of HP which cause damage to infrastructure i.e. roads, railways, bridges, dams, bio-engineering structures, and houses but also lead to loss of life, livelihood and environment. According to the analysis carried by TARU in 2015, 6824 villages of the state falls under high landslide risk zone whereas 11061 villages are in the medium risk zone. 824 villages are in low-risk zone of landslides.

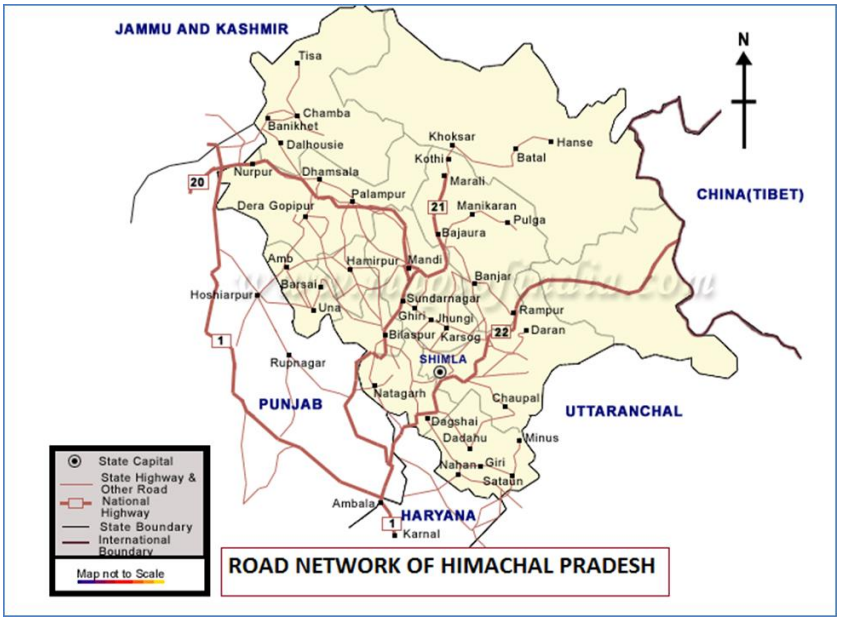
1.1.3 FLOODS

In Himachal Pradesh, flash flood due to cloudburst is common phenomena. The state experiences riverine flooding of varied magnitude almost every year and Sutlej and Beas are most vulnerable rivers. All the villages and property inside the floodplain and near close vicinity are in the vulnerable zone. According to TARU report (2015), about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding.

1.1.4 FOREST FIRES

Forest fires are an annual and widespread phenomenon in the state. Most fires are witnessed during summers when the forests become littered with dry senescent leaves and twinges thereby increasing the probability of starting and spreading of fire. According to TARU report (2015), 11720 sq. Km area of the state comes under very high vulnerability for forest fires. 9891 sq. Km falls under the high-risk zone of a forest fire.

2.2 SECTORAL AND DEPARTMENT RISK



As per the Himachal Pradesh State Disaster Management Policy, Transport Department in the state is prime agency dealing situation of any type of road accidents. Amongst the human-induced disasters, the road accidents are a major killer in the state. Road accidents involve all kinds of vehicles leading to death and injuries. The topography of the state is such way that accidents can happen anywhere without any warning. Common causes of accidents are poor visibility due to fog, non-use of horns especially on curves, use of alcohol, over speeding, overtaking on curves and poor maintenance of the vehicles.

Major causes of road accidents in the state are as follows:

1. **Road Users** - Excessive speed and rash driving, violation of traffic rules, failure to perceive traffic situation or sign or signal inadequate time, carelessness, fatigue, alcohol, sleep etc.
2. **Vehicle** - Defects such as failure of brakes, steering system, a tyre burst, and lighting system.
3. **Traffic violation**: Violation of traffic rules by most of the road users including drivers and pedestrians is one of the biggest concerns of the road accident in the state.
4. **Road Condition** - Skidding road surface, potholes, ruts.
5. **Road design** - Defective geometric design like inadequate sight distance, the inadequate width of shoulders, improper curve design, improper traffic control devices and improper Lighting, improper location of advertisement boards
6. **Environmental factors** - unfavourable weather conditions like mist, snow, smoke and heavy rainfall which restrict normal visibility and makes driving unsafe.
7. **Alcohol impairment**: Under the influence of alcohol, drivers lose the ability to take any decisive action resulting in unfortunate crashes.

2.3 ASSESSMENT OF TRANSPORT SECTOR RISK

2.3.1 LACK OF ROAD INFRASTRUCTURE

In terms of availability of roads per unit area, the road density at the state level is only 0.62 km per sq. km, much lower than that at the national level value of 1.21 km per sq. km. Also, out of the total motorable roads, only 7 % roads were double lane roads and nearly 90 %were single lane roads. While motorable single lane roads have grown at an average rate of 3.9 % per year between 2004-05 and 2012-13; motorable double lane roads have grown at an extremely slow rate of less than 1% (TERI report 2015, "Green Growth and Transport

in Himachal Pradesh") which affects the smooth functioning of vehicles on roads, therefore, increasing the vulnerability of people. In 2012-13, 95 percent of the total road (length of 34,647 kilometres) in the state was motorable amounting to 32,965 kilometres. (Economic Survey of Himachal Pradesh 2013-14). In terms of availability of roads per unit area, the road density at the state level is only 0.62 km per sq. km, much lower than that at the national level value of 1.21 km per sq. km. The road statistics show an extremely slow rate of growth of an average of 2.5% per year from 2004-05 till 2012-13. However, a large part of the state is still deprived of the benefits of the roads and resulting development. In 2012, only 55.19% villages of the state have so far been connected with motorable roads and about 43.91% villages are still deprived of the benefits of the road connectivity (Draft 12th FYP (2012-17) & Annual Plan 2013-14). Also, some of the roads are seasonal and get closed during winters and monsoons due to heavy snowfall, landslides and washouts

2.3.2 HEAVY DEPENDENCY ON ROAD TRANSPORT

The key trends in the sector clearly indicate that the rate of supply of transport infrastructure and facilities in the state is much slower than the rate at which the demand and motorization have increased over the past few decades. As a result, problems like heavy traffic jams, high travel times, pollution, etc. have become more evident in the recent years. Other factors like heavy inflow of tourists and tourist vehicles in the state almost all through the year and overlapping of the peak tourist season with the limited working season in the state adds further to the above-discussed problems which are a major area of concern for the local government.

2.3.3 EXPONENTIAL GROWTH OF VEHICLES

The vehicle population in the state has shown a phenomenal growth over the past few decades. From an average growth rate of less than 3 % during 1980-85, the growth rate of vehicle population in the state increased to more than 17 % in 2010-2015. The total registered motor vehicles in the state have been reported is 736,604 as on 31st March 2012 that is 18.5 % increase over a total of 621,714 vehicles registered in 2011 (Morth, 2012). Out of the total vehicles, non-commercial vehicles accounted for nearly 81 % of the total vehicles. Two-wheelers and cars dominated the vehicle composition, accounting for nearly 77 % of the total vehicle population. An average growth rate of nearly 18 % was observed in case of two-wheelers from 2010-15; cars indicated a further higher average growth rate of nearly 20 % over the same time period. This clearly indicates an exponential growth in traffic volumes particularly personal vehicles in HP. This in combination with slow growth in road infrastructure and services has led to the rising problems of congestion, pollution, depleting air quality, etc. over the years. With growing aspirations and income levels, problems are expected to further rise in the business-as-usual case.

2.3.4 INEFFICIENT FREIGHT TRANSPORT SYSTEM

Freight mobility in the state is found to be uncompetitive and highly inefficient leading to higher costs and poor quality of service. The main issues in this segment include an increasing number of goods carriage vehicles, use of old and less efficient vehicles, overloading and associated issues of higher risk to accidents and damage to roads.

2.3.5 DEPLETING QUALITY OF AIR

With increasing vehicle density in the state, the emission levels from the transport sector are also increasing leading to depleting quality of air. The problem is more prominent in the main tourist locations for instance, in cities like Kullu, Shimla and others.

2.4 PROBABLE DAMAGE AND LOSS

With the increase of road connectivity and a number of vehicles plying on these roads in the State, the number of road accidents and loss of precious human lives is increasing day by day. The data from 2001-02 to 2014-15 show an increasing trend in the number of accidents and the victims in which the hilly terrain of the state and rash and negligent driving are the major cause of these accidents.

Table 2.1: Road accidents from 2001 to 2015 in the state

#	Year	Road Accident	Person Killed	Injured person
1	2001-02	2,226	804	3,798
2	2002-03	2,830	695	3,917
3	2003-04	2,607	867	4,188
4	2004-05	2758	920	4674
5	2005-06	2807	863	4833
6	2006-07	2756	886	4688
7	2007-08	2953	921	5272
8	2008-09	2840	898	4837
9	2009-10	3023	1173	5630
10	2010-11	3104	1105	5350
11	2011-12	3063	1051	5260
12	2012-13	2867	1057	5422
13	2013-14	3008	1116	4961
14	2014-15	3012	1179	5522

Disaster Analysis & Management 2016, published by the Department of Economics and Statistics. Himachal Pradesh during the period of 2001-2015, the state witnessed 39,854 road accidents in which 13,535 people were killed and other 68,352 were injured. The total road length damaged due to various disasters from 2007-2015 was 36,217 km and for the same period of time an amount of Rs. 28,227 lakhs was provided to for repairing / restoration of damaged roads and bridges.

3. RISK PREVENTION AND MITIGATION

The primary objective of mitigation efforts in the transport sector would be:

- To identify, delineate and assess the existing and potential risks and to work towards reducing potential causalities and damage from disasters.
- To substantially increase public awareness of disaster risk to ensure a safer environment for communities to live and work.
- To reduce the risks of loss of life, infrastructure, economic costs, and destruction that result from disasters.

In the transportation sector, the overarching risk prevention and mitigation objective to reduce accident likelihood and severity.

In view of the prevailing risk and the vulnerabilities perception, the mitigation measures proposed have been categorized under following five major groups:

- **Risk assessment:** Risk information should be provided to concern stakeholders on time and for that, the directorate should do a proper risk assessment.
- **Construction work:** All the newly constructed assets should follow the building by-laws of the state.
- **Repair and maintenance:** The directorate should do retrofitting and renovation of the lifeline buildings.
- **Research and technology transfer:** The directorate should identify and interact with research institutions to evolve mitigation strategies both structural and non-structural.
- **Training and capacity building:** Training programs about the awareness of disaster with respect to agriculture can be planned at the village level.
- **Communication arrangements:** A good communication system is a prerequisite in the disaster mitigation.

Risk Prevention and Mitigation Measures to be taken:

- Setting and enforcing mandatory helmet is an effective intervention for reducing the impacts of injuries and fatalities among the two-wheeler users. Wearing helmets reduce the risk and severity of injuries by about 72 % and the likelihood of death by 39 % as per WHO road safety manual.
- Mandatory to wear seat belt both for the front and rear occupants of the car. Wearing a seat belt reduces the risk of fatality of front seat passenger by 40 to 50 % and of a rear-seat passenger by between 25-75 %
- Setting and enforcing speed limits- Speed-monitoring cameras and radars and speed limiting governs in vehicles are useful devices in enforcing the speed limit
- Setting and enforcing alcohol limits- Laws that establish blood alcohol concentration (BAC) of 0.05 g/dl or below are effective at reducing the number of alcohol-related crashes
- Capacity building of key functionaries
- Awareness generation among the public through IEC activities
- Integration of disaster preparedness activities in the on-going development plans and projects

The Departments that do not usually have adequate budgetary allocations on risk mitigation may have to develop strategies for risk prevention and mitigation for short, medium and long-term basis. The National

and State policies, Guidelines and Plans on disaster management shall provide strong justifications and support for such investments. The Departments should make use of these instruments for justifying their proposals for risk prevention and mitigation projects. Otherwise, the Departments always have the opportunities for mainstreaming disaster risk reduction in the existing programmes, activities and projects.

4. MAINSTREAMING DISASTER RISK REDUCTION (DRR) INTO DEVELOPMENT

4.1 POLICY FRAMEWORK ON MAINSTREAMING

Disaster Management Act has stipulated that DM Plans of the Departments of State Government shall integrate strategies for prevention and mitigation of the risks of disasters with the development plans and programmes of the department. The State Policy on Disaster Management, following the National Policy, prescribed 'DRR Mainstreaming' in the following words:

> *"The DRR issues would be mainstreamed in development plans, programmes and policies at all level by all the departments, organisations and agencies. It would be ensured that all the development programmes and projects that originate from or funded by Government are designated with evident consideration for potential disaster risks to resist hazard impact. That all the development programmes and projects that originate from or are funded by Government do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment. It would also be ensured that all the disaster relief and rehabilitation programmes and projects that originate or are funded by Government are designed to contribute to development aims and to reduce future disaster risk."*

The Himachal Pradesh State DM Plan 2012 has one full chapter on 'Mainstreaming DM Concerns into Development Plans/Programmes/Projects'. The Plan has proposed strategies for integration and mainstreaming DRR into a few flagships national programmes in the sectors of rural and urban development, education, health and public works department. Some of these programmes have undergone changes in the recent years but the strategic entry points for mainstreaming DRR in development plans remain the same. Concerned Departments may, therefore, incorporate structural and non-structural measures for disaster risk reduction into the projects according to the contexts of local situations within the broad framework and guidelines of the programmes. . For example, construction of school buildings under Sarva Siksha Abhiyaan may conform to the standards of seismic safety even if this involves higher costs. If the guidelines of the programme do not permit higher costs, the State Government may bear the additional costs involved from their own sources. Therefore, mainstreaming may involve innovative adaptation of national programmes according to local contexts for disaster reduction. Many State Governments have made such innovative adaptations, which the Departments may like to consider on their merits.

With the abolition of Planning Commission and devolution of higher tax revenue to the States, many central sectors and centrally sponsored plan programmes are undergoing changes. The State Governments shall, therefore, have greater freedom to design state specific development programmes and projects. This will create new opportunities for disaster risk reduction. Therefore, the Departments are advised to propose specific programmes of disaster risk reduction in their respective sectors, based on the assessment of risks in their sectors and the likely benefit of such programmes.

Every Department of the State Government implements state-level development programmes that provide good entry points for mainstreaming DRR in development. The Departments may, therefore, explore the possibilities of mainstreaming DRR in as many existing programmes and projects as possible. This will ensure that existing development projects are not creating any new risks of disasters; on the contrary, the projects are designed in such a manner that these would facilitate the process of risk reduction without any significant additional investments.

4.2 MAINSTREAMING DRR IN PROJECT CYCLE MANAGEMENT

The best way to ensure that DRR is mainstreamed into the development projects is to integrate this into the Project Cycle Management (PCM). PCM is the process of planning, organizing, coordinating, and controlling of a project effectively and efficiently throughout its phases, from planning through execution, completion and review to achieve the pre-defined objectives at the right time, cost and quality.

Transport has long been high on the agenda of the state government. The large investments plan in the sector indicate the strong commitment of the Himachal Pradesh government in developing a well-developed transport system. Under the Twelfth Five Year Plan, nearly 21 % of the total proposed outlays focus on the transport sector, a little more than 15 % of the total outlays under the Eleventh Plan. Given the high dependency of the state on the road transport sector, the state government pays extreme attention in providing all-weather road link connectivity to as Green Growth and Transport in Himachal Pradesh with many habitations as possible in the state. As per the state Annual Plan 2013-14, about 39045 km aggregate road length is required in the State. The Twelfth Plan envisages construction of about 7,500 km of roads connecting all the villages and habitations with the population more than 100 persons in the State.

The department also gives attention in ensuring maintenance and upkeep the already constructed roads in the state during the Twelfth Plan. The State Government also proposes to initiate the process of constructing tunnels and bridges with the financial assistance of multilateral agencies with the objective of reducing the distance between various destinations during the Twelfth Plan. The transport department looks at providing cableways, transportation connectivity and facilities to the areas which cannot be connected with road network due to one reason or the other can be ensured (Draft 12th FYP (2012-17) & Annual Plan 2013-14).Discharge of quality public transport services also attains paramount significance on the agenda of the transport department in HP. Buses for intra city transport have been recently started on the main arterial roads in a few main cities like Kullu, Shimla, and others,

All these development projects are developed for transport sector of Himachal Pradesh every year, very few or none have a strong concern in ensuring the application of DRM practices. Other areas particularly road safety and freight transport have not achieved much attention till now in terms of investments and policy actions. Hence mainstreaming disaster management into the development planning process essentially means looking critically at each activity that is being planned.

Transport department incorporating disaster risk reduction component into development may include:

- Reviving and strengthening of road safety components in ongoing investment projects and technical assistance by improving the design, attracting additional funds, and monitoring road safety inputs better; and
- Mainstreaming road safety components in new projects by including these in project design and increasing their importance in the design phase.

5. DISASTER PREPAREDNESS

Disaster preparedness has been defined as "the state of readiness to deal with a threatening disaster situation or disaster and the effects thereof". The Directorate may review their "state of readiness" and prepare a strategic action plan to deal with possible disaster situations. Transport Department, place a high priority on passenger safety and security. During disaster situation particularly in road accidents, transport department is becoming more actively involved with their local communities in planning and preparing for emergencies.

5.1 MEASURES TO ENHANCE CAPACITY OF THE TRANSPORT DEPARTMENT

- Identify Department resources and capabilities that may be needed in road accidents.
- Specify priorities roles and responsibilities of major stakeholders in the transport department
- Set up separate road safety units in each Regional Transport Offices to monitor accidents, designing and implementing safety schemes, coordinating safety-related activities
- The inclusion of road safety component in all important road projects
- Review road and traffic engineering standards
- The department should make evacuation plan for their office buildings and these can be displayed on the notice board so that people are aware of the process.
- The staff of the department can be trained on basic first aid so that they can respond in saving one other during a disaster situation
- Designate a focal point for disaster management within the department
- Geo-tagging of all the assets can be done to assess the post-disaster losses if any
- Secondary database management plan for important documents
- Analyse past experiences of the Department to know what went well and what could have been done better for risk reduction and emergency response by the department
- Document it as lessons learnt annually and after every disaster
- Check available stocks of equipment and materials which are likely to be most needed during disasters like floods and droughts
- All valuable equipment's and instruments should be packed in protective coverings and stored in room the most damage-proof
- Create mechanism for regular Inspection and maintenance of equipment and acquisition of new equipment as per your minimum inventory list for disaster risk reduction
- Emergency numbers can be displayed on the notice board.

5.2 MEASURES TO HAVE SAFETY AWARE ROAD USERS

- Proper training and effective licensing for drivers.
- Awareness of appropriate speed limits supplemented by enforcement and education.
- Improve driver information on speeds and run campaigns on the dangers of speeding
- Monitor vehicle speeds across the network on an annual basis

5.3 MEASURES TO HAVE SAFER ROADS

- Roads and roadsides to be designed, built and maintained to reduce the risk and severity of crashes.
- Develop a state road safety improvement with a detailed understanding of the causes of accidents and hotspot areas

- Assess the road safety implications for the all the National and State Highways of the state
- Conduct road-safety audits in all the state and national highways
- Prevent road accidents through more safety-conscious planning, design, construction and maintenance and improve hazardous location
- Improve the design and safety features of new roads through the review of highway design standards and the introduction of proven approaches such as Road Safety Audit
- Identify roads that need improvement for pedestrians
- Road design and geometric improvements to compensate for inadequacies of road users.
- Warning signs for road users.
- Accident blackspot investigation and rectification through road design.

5.4 TRAINING AND AWARENESS

- Conduct annual accident remedial measures awareness programme for the general public
- Awareness of traffic laws for the road users.
- Develop targeted road safety campaigns integrated with enforcement operations that address compliance with speed limits, drinking and drug driving, and negligence driving
- Implement priority campaigns on pedestrian safety
- Work with community, religious leaders and special interest groups to promote road safety messages

5.5 INTER-DEPARTMENTAL COORDINATION

- Provides a framework for coordinating and complementing the road safety initiatives with other department handling road accidents such police, fire and rescue, home guard, health etc
- Develop an integrated, comprehensive and coordinated accident data system involving different stakeholders.
- Constitute road safety group constituting members from Police, HPTC, Fire and Rescue, Health Department. This group meet every four months to discuss road safety issues in relation to the road safety action plan
- Review and establish pedestrian facilities in all urban centres in the state
- Refocus the accident-prone area guidelines to ensure they are fully integrated with safe system principles.
- Regular inspection of the condition of all public transport vehicles which is one of the main causes resulting in accidents on the hill roads of Himachal Pradesh.

5.6 DISASTER PREPAREDNESS INITIATIVES

For the Regional Transport Offices

- Make available major accidents rescue equipment in all regional transport offices in the state
- Conduct regular road accidents mock drills under the jurisdiction of all regional transport offices in the state
- Set up Accident Emergency Control rooms in each Regional Transport Offices in the state
- Develop ambulance policy for post-accident treatments and emergency treatment training for to Reductions in post-accident fatalities and improvement in emergency services.

6. DISASTER RESPONSE

The response plan of the Department includes the design of actions based on Standard Operating Procedures and tested through mock drills and exercises that would be initiated by a trigger mechanism based upon the impending or actual occurrence of an event of a disaster. Many Departments and agencies of the State Governments will be required to perform important functions relating to relief and rehabilitation. The response plan of the Department should provide detail with the logistic, financial and administrative support necessary for discharging these functions and the manner in which these functions shall be discharged.

Transport Sector plays vital roles in response to and recovery from disaster situations. To ensure the most effective response, this sector becomes more actively involved with their other stakeholders for planning and preparing for emergencies.

- Regional Transport Offices should constitute emergency response team to give a response to any disaster emergency or accident. It is very important that all team members are well trained and backup members are clearly identified
- Introduce toll-free telephone number for Regional Transport offices emergencies
- Develop ambulance network along the major highways, urban and rural roads to improve ambulance services and their access.
- Help to ensure that the public transportation system satisfies critical response objectives and effectively reap the benefits of planned and coordinated response
- Expedite response to an event occurring on transportation property by promoting the rapid deployment of personnel and equipment to address, manage, and resolve the event
- Emergency evacuation of citizens from affected areas, coordinated with other stakeholders
- Identification of routes and schedules to support the safe transportation of emergency responders, public utilities and support personnel and essential to an incidents site
- Provisions of vehicles and equipment to support emergency operation and incident stabilization
- Promote early recognition of emergency events with the potential to overwhelm the capabilities of the transportation system to respond which require activation of available local and mutual aid resources
- Coordinate the application and integration of additional organized, qualified resources from other agencies in response to a major emergency
- Implementing emergency procedures for communicating with controlling vehicle movements
- Implementing procedures for evacuation of passengers and employees affected by the event
- Re-routing transport around the affected station
- Assistance / first aid for passengers and employees with injuries.

7. DISASTER RECOVERY

The transport department has a critical role in recovery after a major disaster or accidents. The Department owns large transportation networks assets which contribute significantly to the recovery process. While the transportation recovery operation is a multi-stakeholders task and involves stakeholders like police, fire and rescue, PWD, HPTC, health, etc. still the transport department is ultimately responsible for the recovery of loss in the in the transport sector. During the recovery process, the transport department could be fully involved in all means of information sharing and coordination with the various departments. Such coordination with other department /stakeholders will help to build resilience into the transportation network and will mitigate the impacts of future incidents

As a crucial role in the recovery process, the department may ask to:

- Provide essential transportation service to critical facilities during the initial response and recovery phases
- Assess the impact of the incident/disasters on the transport department infrastructure and the overall transportation network
- Identifies temporary transportation solution (alternative routes) that can be implemented by others when the system or infrastructure are damaged
- Provide technical assistance throughout the recovery phase
- Identified and prioritize projects for transportation for quick implementation
- Coordinates actions and provides technical expertise and financial assistance for repaired and restoration of transport infrastructure and network

8. FINANCIAL ARRANGEMENT

Section 40(2) of the Disaster Management Act stipulates that every department of the state while preparing the DM Plan, shall make provisions for financing the activities proposed therein. Normally the funds required for risk assessment and disaster preparedness must be provided in the budgets of every concerned department. The State Transport Department is getting amount out of the compounding fee and the State Government has directly allocated funds to the Transport Department under road safety. State Government has also created HP Transport Infrastructure Fund for every financial year which can utilize for the measures of road safety.

The department can also come up with a separate budget head within the budget allocation of the department. This budget can be used to work on the already suggested mitigation and preparedness measures, as response and relief are already being taken care of by the SDRF and NDRF.

This budget head can work with a very basic amount initially as the marginal costs involved in mainstreaming DRR in existing programme is not very sizable. Also, the funds required for risk assessments and disaster preparedness are also not very large. This budget will help in institutionalizing the entire process. And once the department starts having a separate budget for prevention and mitigation, at least some measures will start automatically.

NOTES