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Fire Disaster Management Plan | Shimla City

2020-21

SHIMLA MUNICIPAL CORPORATION
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Shimla Municipal Corporation

Fire Disaster Management Plan | Shimla City

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PREFACE

A well-equipped and well-informed fire risk management plan is essential to the urban development of cities, especially the ones located in the high-risk conditions. Being located in a geo-physically vulnerable area known for its unique climatic conditions, built environment and forest cover, Shimla city is one of the major urban settlements prone to the fire hazards. Recent fire disasters in the Himalayan region are enough to highlight the need to strengthen fire risk management at all levels, including the urban local bodies. The Municipal Corporation Shimla recognizes the need, significance and urgency of developing its capacities for fire risk management and aims to make the risk-informed development of the city a priority. The State Disaster Management Plan and the District Disaster Management Plan endorse the loss and damages in recent fire incidences occurred in Shimla City.

I am pleased to note that under the USAID-GoI-UNDP project titled 'Enhancing Institutional and Community Resilience to Disasters and Climate Change', the Municipal Corporation Shimla has formulated the Fire Disaster Management Plan (FDMP) for the city. I believe that the Municipal Corporation Shimla will keep the FDMP updated regularly and will ensure that the information given in the plan is used for improving the fire-related disaster preparedness at the city-level. I thank Additional Commissioner, MC Shimla Shri Ajit Bhardwaj for supervising the work related to the formation of the FDMP; Chief Fire Officer Sh. J. C. Sharma, Department of Fire Services, Himachal Pradesh and other respective officials of Department of Fire Services for their continuous support in field investigations; Dr. Harkanchan Singh, City Project Coordinator-UNDP India for coordinating the formation process; and the consulting agency (Doers) for formulation of the FDMP in a very professional manner.

I hope that the FDMP (2021) will guide all the concerned stakeholders to strengthen institutional planning and preparedness for Fire Hazards.

Ashish Kohli
Commissioner
Municipal Corporation Shimla

FOREWORD

It gives me immense pleasure to state that the Municipal Corporation Shimla has formulated the first-ever Fire Disaster Management Plan at the City level. As we all know, Shimla city is prone to various types of fire hazards due to its old wood-built environment and geographical conditions. In the past years, city has lost many valuable heritage buildings in the fire incidences. There have been many cases of domestic fires too. There was a need of city fire disaster management plan which includes all the stakeholders at ward level so that quick and effective response can be available at ward level.

Moving forward towards reducing the fire-related risks in Shimla city, the Municipal Corporation Shimla incorporated the findings of the Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City (2016) and formulated a separate plan for Fire Risk Management in the city. I am sure that all the stakeholders will refer to the Fire Disaster Management Plan (FDMP) for effective fire risk management at ward level. With the support of UNDP India under the USAID-GoI-UNDP project titled 'Enhancing Institutional and Community Resilience to Disasters and Climate Change', the Municipal Corporation Shimla could develop this plan at the city level. I would like to extend my thanks to the Department of Fire Services, Government of Himachal Pradesh for supporting the consulting agency – Doers in mapping all the fire hydrants in the city and guiding them towards the specific requirements for an inclusive Fire Disaster Management Plan at the City level. I congratulate Dr. Harkanchan Singh, City Project Coordinator- UNDP India for coordinating the processes related to the formulation of FDMP at city level.

I believe this plan will contribute to building resilience to fire-related disasters in the city.

Ajit Bhardwaj
Additional Commissioner
Municipal Corporation Shimla

ACKNOWLEDGEMENTS

It has been a great experience for us to develop the first ever Fire Disaster Management Plan (FDMP) of Shimla city for the Municipal Corporation Shimla. As the consultant for this assignment, 'Doers' expresses its sincere gratitude to Shri Ashish Kohli, Commissioner, Municipal Corporation Shimla and Shri Ajit Bhardwaj, Additional Commissioner, Municipal Corporation Shimla for their guidance, valuable insights and sustained support during this process.

We are highly grateful to Shri J. C. Sharma, Chief Fire Officer and the officers and staff posted at all three Fire Stations of Shimla City to guide and support through the field data collection and mapping of fire hydrants. We are grateful to the City Disaster Management cell and Shimla Jal Prabandhan Nigam Limited along with all the key informants/stakeholders who were involved in this assignment despite the multi-faceted challenges posed by the COVID-19 pandemic.

The process also involved a consultation meeting with various departments and organizations in the Shimla city. The team would like to thank all the stakeholders who attended the consultation meeting.

We offer our special thanks to Dr. Harkanchan Singh, City Project Coordinator, UNDP India for her valuable support in coordinating the activities, data collection as well as in organizing the meetings with key stakeholders.

Special Mention: This assignment was carried out as a consultancy contract awarded to 'Doers' by the Municipal Corporation Shimla under the USAID-GoI-UNDP project titled 'Enhancing Institutional and Community Resilience to Disasters and Climate Change'.

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December 2021

ACRONYMS

ALP Aerial Ladder Platform

ARTRAC Army Training Command

BSNL Bharat Sanchar Nigam Limited

CATS Centralized Accident Trauma Service

CBFM Community Based Fire Management

CDRT City Disaster Response Team

CI Cast Iron

CMO Chief Medical Officer

DCP Dry Chemical Powder

DDMA District Disaster Management Authority

EOC Emergency Operations Center

ESF Emergency Support Function

FAO Food and Agriculture Organization

FH Fire Hydrant

GIS Geographic Information System

HAZMAT Hazardous Material

HPSDMA Himachal Pradesh State Disaster Management Authority

HPUCES Himachal Pradesh University Centre for Evening Studies

HRTC Himachal Pradesh Road Transport Corporation

HRVA Hazard Risk Vulnerability Analysis

ICS Incident Command System

IFM Integrated Fire Management

IGMCH Indira Gandhi Medical College & Hospital

IIAS Indian Institute of Advanced Study

IMD India Meteorological Department

IPH Irrigation and Public Health

JNNURM Jawaharlal Nehru National Urban Renewal Mission

KML Keyhole Markup Language

MAH Major Accident Hazard

MOEFA Manually Operated Electronic Fire Alarm

NBC National Building Code

NDMA National Disaster Management Authority

NDRF National Disaster Response Force

PPE Personal Protection Equipment

QRT Quick Response Team

RCC Reinforced Cement Concrete

RKMV Rajkiya Kanya Maha Vidayaliya

RMSI Risk Management Services, Inc.

SAARC South Asian Association for Regional Cooperation

SADAs Special Area Development Authorities

SAR Search and Rescue

SDRF State Disaster Response Force

SEB State Electricity Board

SFAC Standing Fire Advisory Council

SPA Shimla Planning Area

STP Sewage Treatment Plan

TTL Turn Table Ladder

UNESCO United Nations Educational, Scientific and Cultural Organization

VHF Very High Frequency

VPR Volume to Plot Area Ratio

WT Water Tender

1 Introduction

PROFILE OF SHIMLA CITY

1.1 Location of the City

Shimla is a beautiful hill station in the middle range of Himalayas. In the year 1864, Shimla was declared as the summer capital of the British Raj in India. From 1947 to 1953, it was the headquarters of Punjab state, until the new capital city of Chandigarh was completed. A popular tourist destination, Shimla is often referred to as the "Queen of Hills," a term coined by the British. Located in the north-west Himalayas at an average altitude of 2,205 metres (7,234 ft) above the sea level and lies between 31°4' to 31°10' North and 77°5' to 77°15' East. The total area under the MC Shimla is 35.34 Sq. Km. (Census of India, 2011). Of the total area of 9950 hectares of Shimla Planning Area, about 1475 hectares which accounts for 15% of the total SPA, is under urban use (Rapid Baseline Assessment Shimla City, October 2013).

1.2 Administrative Division

In its 160 years old history, the Municipal Corporation, Shimla came into an autonomous existence with the passing of the Himachal Pradesh Municipal Corporation Act, 1994 and a revised delimitation of wards into 21. With 5 retention policies, the city had 25 wards till 2017. However, in mid-2018 some of the wards have been re-framed and some new have been added into the Municipal Corporation jurisdiction, making the total number of wards to 34 (Table 1). The Map of MC Shimla is provided at Annexure 06. Apart from the MC area, the city also has three areas which come under the Special Area Development Authorities (SADAs). The total number of households in Municipal Corporation, Shimla is 46,306 and total population is 169578 (Census 2011), out of which, 93,152 are males and 76,426 are females. The Sex Ratio is 756 females per 1000 males.

Table 1 : Municipal Corporation, Shimla - Wards Names & Numbers

Ward No.	Ward Name	Ward No.	Ward Name
1	Bharari	18	Engine Ghar
2	Ruldu Bhatta	19	Sanjauli Chowk
3	Kaithu	20	Upper Dhalli
4	Annadale	21	Lower Dhalli
5	Summer Hill	22	Shanti Vihar
6	Totu	23	Bhattakufar
7	Majath	24	Sangti
8	Boileauganj	25	Malyana
9	Kachhi Ghati	26	Panthaghati
10	Tutikandi	27	Kasumpti
11	Nabha	28	Chotta Shimla
12	Phagli	29	Vikas Nagar
13	Krishna Nagar	30	Kangna Dhar
14	Rambazar	31	Pateog
15	Lower Bazar	32	New Shimla
16	Jakhoo	33	Khalini
17	Benmore	34	Kanlog

Planning area: The 9950 Hectares of total area as taken into account for revision and formulation of Development Plan, includes, Municipal Corporation, Shimla, Special Area Development Authorities of Kufri, Shoghi and Ghanahatti Special Area which is as under:

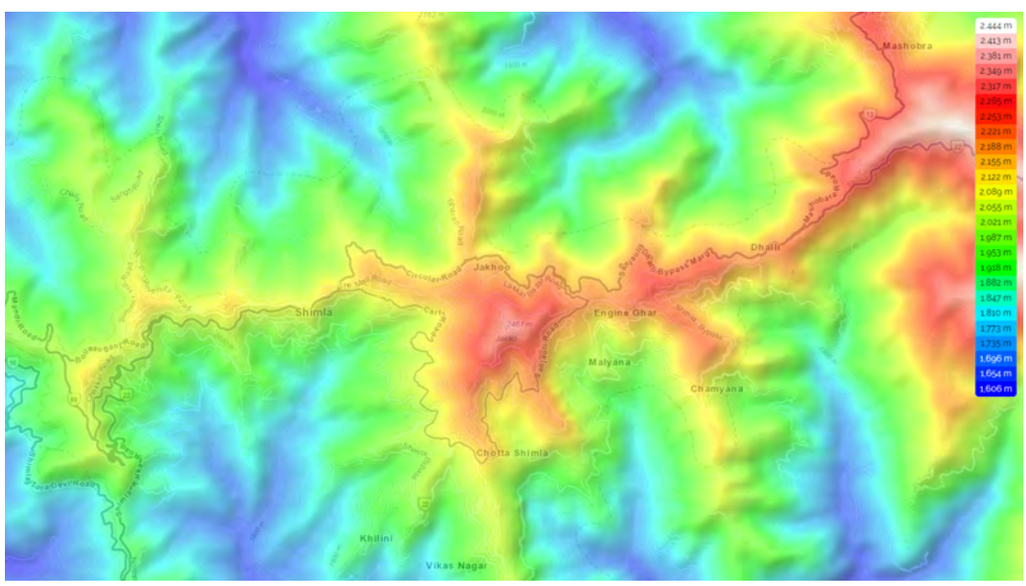
Table 2 : Settlements falling within Planning Area

Settlement	Area in Hectare	Percentage
M.C. Shimla	2207	22.18
S.A. Ghanahatti	1647	16.55
S.A. Kufri	3173	31.89
S.A. Shoghi	2923	29.38
Total	**9950**	**100**

1.3 Physical Features

1.3.1 Topography

Approximately 35.34 square kilometres (2019) of the city area does spread over the previous seven hill spurs. The average elevation of these spurs varies from 2073 m to 2454 m from the mean sea level (Picture: Elevation Profile of Shimla City). Jakhoo Hill is the most elevated spur of Shimla. These spurs are inter-connected by roads. The important character of the road network circumscribing these hills is that it is connected to the Mall Road from Boileauganj to Chhota Shimla.



Elevation Profile of Shimla City

Table 3 : Hill Spurs & their Mean Elevation

Hill Spur	Elevation (Mts.)
Jakhu Hill	2454
Elysium Hill	2257
Museum Hill	2201
Prospect Hill	2177
Observatory Hill	2150
Summer Hill	2104
Potters Hill	2073

1.3.2 Soil Type

The soil type of Shimla is mainly grey wooded or podzolic soils.

1.3.3 Existing Land Use Plan

Of the total area of 9950 hectares of Shimla Planning Area (SPA), about 1475 hectares which accounts for 15% of the total SPA is under urban use. The existing land use of urban area is given in Table 4.

The current land use plan of Shimla reflects that there is hardly any open space available in the city. For better response to any emergency situation open spaces help to prevent, organizing community shelters, organizing health and rationing camps, etc. In congested geographical location it is difficult to provide efficient response in any emergency situation.

Table 4 : Land use pattern of Urban and SPA

S. #	Land Use	Area (In Hectare)	% of Urban Area	% of Planning Area
1.	Residential	903.13	61.19	9.07
2.	Commercial	25.22	1.71	0.25
3.	Industrial	9.00	0.62	0.09
4.	Tourism	21.70	1.47	0.22
5.	Public & Semi-Public	138.78	9.40	1.39
6.	Parks & Open Spaces	6.00	0.41	0.06
7.	Traffic and Transportation	371.93	25.20	3.75
8.	**Sub Total**	**1475.76**	**100.00**	
9.	Agriculture	2174.75		21.85
10.	Forest	6080.15		61.12
11.	Water Bodies & Undevelopable Land	219.34		2.20
	Grand Total	**9950.00**		**100.00**

Source: City Development Plan of Shimla

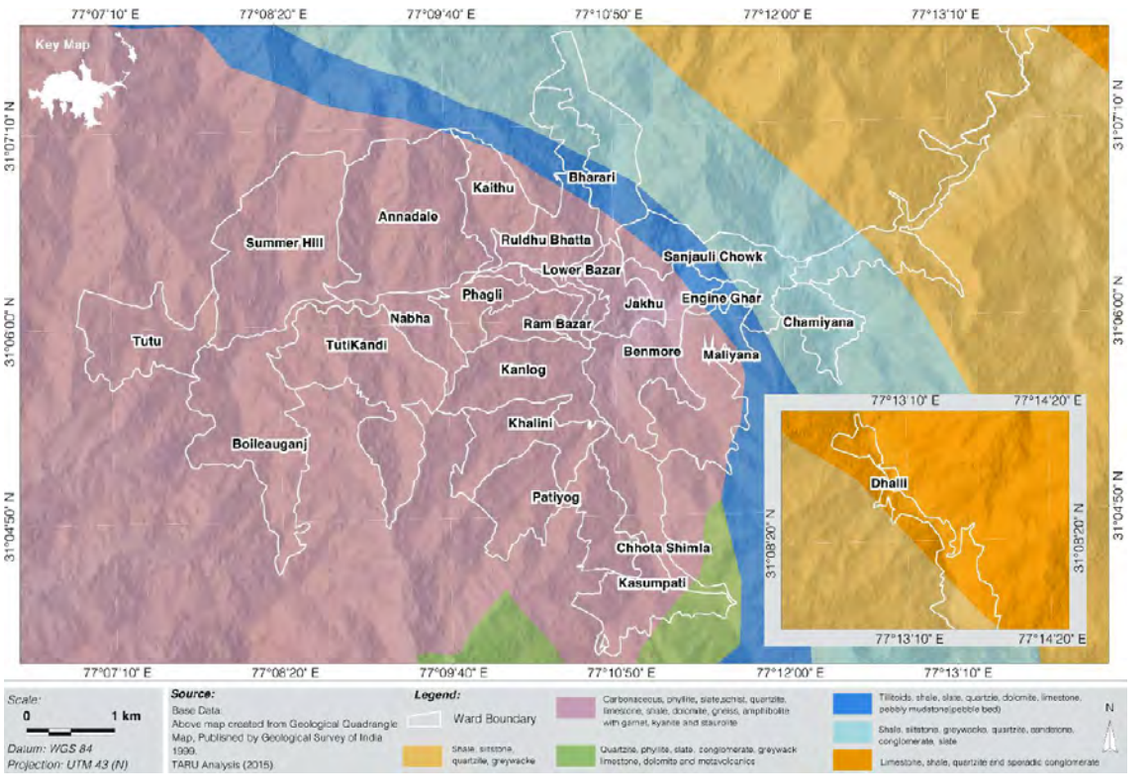
1.4 Geology and Geomorphology

In Shimla, the sediment eroded from the Himalayas 30 million years ago and deposited by ancient rivers. The town is situated on the rocks of Jutogh Group and Shimla Group. Jutogh group occupies main Shimla area and extends from Annadale-Chaura Maidan-Prospect Hill-Jakhoo-US Club and highland area.

Shimla Group comprising of earlier Chail Formation and Shimla Series represented by shale, slate, quartzite greywacke and local conglomerate is well exposed in Sanjauli-Dhalli area. The City is situated at the traverse spur of the Central Himalayas, south of the river Satluj at 31°04' North to 31°10' North latitude and 77°05' East to 77°15' longitude, at an altitude of 2130 metres above mean sea level.

In shape, it has been described as an irregular crescent. It is 88 kilometres from Kalka having "exquisite" scenery. It is spread over an area of 9950 Hectares along with its commanding position. It has a panoramic view and scenic beauty all around. The city is a unique combination of hills, spurs and valleys. To the north and east, a network of mountain ranges which are crossed at a distance by magnificent crescent of new peaks, the mountains of Kullu & Spiti in the North, the central range of the eastern Himalayas stretching East and South-east. The East-West axis have emerged major axis of development for the city.

Map 1 : Geological Map Showing Soil Formations of Shimla City



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

1.5 Climate and Rainfall

Shimla in general has a mild highland climate, with temperature in peak winters, falling below 0°C. Shimla features a subtropical highland climate under the Koppen climate classification. The climate in Shimla is predominantly cool during winters and moderately warm during summers. The temperatures range from -4°C (24.8°F) to 31°C (87.8°F) over the year. The average temperature during summer is between 19°C and 28°C and between -1°C and 10°C in winter. Monthly precipitation varies between 24 mm. in November to 415 mm. in July. It is typically around 45 mm. per month during winter and spring and around 115 mm. in June as the monsoon approaches. The average total annual precipitation is 1520 mm (62 inches). Snowfall in the region, which historically has taken place in the month of December, has lately (over the last fifteen years) been happening in January or early February every year.

Table 5 : Climate Data for Shimla City

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	21.4 (70.5)	22.6 (72.7)	25.8 (78.4)	29.6 (85.3)	32.4 (90.3)	31.5 (88.7)	28.9 (84.0)	27.8 (82.0)	28.6 (83.5)	25.6 (78.1)	23.5 (74.3)	20.5 (68.9)	32.4 (90.3)
Average high °C (°F)	10.9 (51.6)	11.9 (53.4)	15.8 (60.4)	20.5 (68.9)	24.1 (75.4)	24.8 (76.6)	22.6 (72.7)	22.0 (71.6)	22.1 (71.8)	20.3 (68.5)	16.7 (62.1)	13.5 (56.3)	18.8 (65.8)
Average low °C (°F)	2.8 (37.0)	3.7 (38.7)	7.0 (44.6)	11.4 (52.5)	14.6 (58.3)	16.2 (61.2)	15.9 (60.6)	15.5 (59.9)	14.1 (57.4)	11.1 (52.0)	7.8 (46.0)	5.1 (41.2)	10.4 (50.7)
Record low °C (°F)	−10.6 (12.9)	−8.5 (16.7)	−6.1 (21.0)	−1.3 (29.7)	1.4 (34.5)	7.8 (46.0)	9.4 (48.9)	10.6 (51.1)	5.0 (41.0)	0.2 (32.4)	−1.1 (30.0)	−12.2 (10.0)	−12.2 (10.0)
Average rainfall mm (inches)	66.4 (2.61)	75.3 (2.96)	81.2 (3.20)	60.8 (2.39)	90.3 (3.56)	181.9 (7.16)	329.8 (12.98)	320.4 (12.61)	142.3 (5.60)	36.7 (1.44)	18.4 (0.72)	24.2 (0.95)	1,427.7 (56.21)
Average snowfall cm (inches)	42 (17)	43 (17)	7 (2.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7 (2.8)	99 (39.6)
Average rainy days	4.2	5.6	6.1	4.8	7.0	9.6	17.0	15.7	8.2	2.3	1.3	2.0	83.7
Average snowy days	4.2	4.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	11.2
Average relative humidity (%) (at 17:30 IST)	67	65	57	47	48	62	85	88	79	63	61	60	65

Source: India Meteorological Department (IMD)

1.6 Socio-Economic Features

Employment is largely driven by the government and tourism. Being the administrative capital of the state of Himachal Pradesh, the city houses several central and state government offices. Government jobs account for almost half (47%) of the working population. Direct hospitality industry personnel such as tour guides, hotel and restaurant employees, etc., are few (10%).

Individual crafts and small-scale industries, such as tourist souvenir production and horticultural produce processing, comprise most of the remainder. In addition to being the local hub of transportation and trade, Shimla is the area's healthcare centre, hosting a medical college and four major hospitals: the Indira Gandhi Hospital (formerly known as Snowdon Hospital) Deen Dayal Upadhyay Hospital (formerly called Ripon Hospital,) Kamla Nehru Hospital and the Indus Hospital. The city's development plan aims to make Shimla an attractive health tourism spot. The unemployment rate in the city has come down from 36% in 1992 to 22.6% in 2006. This drop is attributed to recent industrialization, the growth of service industries, and knowledge development.

Indira Gandhi Medical College & Hospital (IGMCH), Shimla

1.7 Demographic Features

Shimla city consists of the Shimla Municipal Corporation and Shimla planning areas (SPA). The SPAs are Dhalli, Tutu, and New Shimla urban agglomerations. In 2011 the total population of District Shimla is 813,384 compared to 722,502 of 2001. Male and female are 424,486 and 388,898 respectively. Population Growth for Shimla District recorded in 2011 for the decade has remained 12.58 percent. Same figure for 1991-2001 decade was 17.02 percent. Total Area of Shimla District was 5,131 with average density of 159 per sq. km. Shimla Population constituted 11.86 percent of total Himachal Pradesh Population. Sex Ratio of Shimla district is now 916, while child sex ratio (0-6) is 922 per 1000 boys. Children below 0-6 age were 80,778 which form 9.93 of total Shimla District population. Average literacy rate for Shimla district is 84.55 percent, a change of from past figure of 79.12 percent. In India, literacy rate is counted only for those above 7 years of age. Child between 0-6 ages are exempted from this.

The population projections have been made for the year 2011 and 2021. It is anticipated that there will be a population of 2,35,970 and 3,18,560 respectively. The increasing trends of migration and decreasing death rate will affect the projected population. Shimla's changing socio-economic conditions and better amenities are now the major pull factors for rural population migrating to the city. If the migration is unchecked, it will have its adverse effect on the growth of population and overall development of Shimla City.

1.8 Culture

1.8.1 Heritage Structures

Perceived and established by the British during colonial period in first half of 19th century as their Summer Capital. It is known to all over the world for its heritage value. Shimla has total 92 identified heritage structures (Source: Single Umbrella Committee).

1.8.2 Religious Centres

The Major religious centres of the city are:

1. Kali Bari Temple
2. Jakhoo Temple
3. Sankat Mochan Temple
4. Tara Devi Temple
5. Kamna Devi Temple (Boileauganj)
6. Dhingu Mata Temple (Sanjauli)
7. Singh Sabha Gurudwara, Bus Stand
8. Christ Church, The Ridge
9. Christ Church, Near Deputy Commissioner's Office
10. Dargah, Kachighatti
11. Eidgah, Middle Bazar
12 Buddhist Monastery, Sanjauli

1.8.3 Tourist Centres

Shimla is a major tourist spot of India. The main tourist centers within city are:

1. The Mall
2. The Ridge
3. Christ Church at the Ridge
4. Jakhoo Hill
5. Indian Institute of Advanced Study (Viceregal Lodge)
6. State Museum
7. Annadale Ground
8. Summer Hill
9. Tara Devi
10. Chadwick Falls
11. Glen Falls

Indian Institute of Advanced Study (Viceregal Lodge), Shimla

1.8.4 Government and Semi-Government Establishments

Shimla is the State capital of Himachal and having all important Government Offices located in Shimla. Many of these offices reside in heritage buildings. The main Govt. Offices are:

1. Vidhan Sabha of the State of Himachal Pradesh, Secretariat, High Court, HP University, Railway Board, AG Office and ARTRAC.
2. Apart from Government offices many Semi-Government and private agencies are also started their establishment in State Capital. Main Semi Government/ private offices such as Commercial Banks, Telecom and Insurance Operators etc.

1.8.5 Educational Facilities

Shimla, the Queen of Himalayas is a heart of quality education. Since the British India, Shimla had been the hub of good schools. Almost all the schools are affiliated either with the Indian Certificate of Secondary Education (ICSE), Central Board of Secondary Education (CBSE) and Himachal Pradesh Board of School Education (HPBOSE). The small city also has medical, dental, engineering, ITI, MBA, Hotel Management and Law Colleges. Shimla is home to the Himachal Pradesh University (HPU) and all the degree colleges are affiliated to HPU. Public Schools like Jesus & Mary, Auckland House School, Loreto Convent Tara Hall, St. Edwards, Bishop Cotton School etc. are very old (established during the British Raj) and are known for their high standards of education. Following are the Degree Colleges affiliated to the Himachal Pradesh University, Shimla:

1. St. Bede's College, Nav Bahar
2. Government Degree College, Sanjauli
3. Rajkiya Kanya Maha Vidayaliya (RKMV), Longwood
4. HPU Centre for Evening Studies (HPUCES), The Mall
5. Institute of Vocational Studies, Summer Hill
6. Rajiv Gandhi Government Degree College, Chaura Maidan

Medical & Dental Colleges affiliated to the Himachal Pradesh University, Shimla:

1. Indira Gandhi Medical College & Hospital, Shimla
2. H.P. Government Dental College & Hospital, Shimla

1.8.6 Health Facilities

The city provides very good and effective health services in Shimla. People across from State come here for treatment and health care. The main government hospitals are as follows:

1. Indira Gandhi Medical College & Hospital, Shimla
2. Kamla Nehru Hospital, Shimla
3. DDU Zonal Hospital, Shimla
4. Regional Ayurvedic Hospital, Shimla

The main private hospitals in Shimla are as follows:

1. Indus Hospital
2. Shimla Sanatorium
3. Shri Ram Hospital
4. Tenzin Hospital

1.8.7 Places of Mass Congregation

The main places of mass congregation in the city are as under:

1. The Ridge
2. The Mall Road
3. Lower Bazaar
4. Major Temples during festivals
5. The Ridge during the Summer festival or Special visits
6. Vidhan Sabha Complex during sessions
7. H.P. Secretariat Complex

1.9 Power Stations/Electrical Installations (Receiving Station)

The overall electricity consumption of Shimla city is 11, 46, 94,707 Kw (2010-2011). The total number of consumers in City is 37,805 (April 2011). There is one Grid in Totu and total 6 substations located in Bharari, Eidgaah, Khalini, Totu, Summer Hill and Sanjauli. The main supply is coming from different Hydro Power Plants- Bhabha, Giri and Nabha.

1.10 Water Supply

The IPH Department is supplying water to Municipal Corporation Shimla in bulk. M.C. Shimla does the distribution of water in entire Shimla. There is metric distribution system of water is in place. There are six water stations which provide supply to entire Shimla: Sanjauli, Chhota Shimla, New Shimla, Central Zone, Lakkar Bazar, Chaura Maidan. There are two big water storage tanks at the Ridge and Sanjauli which are used for bulk water storage and supply.

1.11 Sewerage System

The stepping stone to modern sewerage system from dry latrine system took place in 1980s. However, the large scale set-up of Shimla sewerage system came into operation in October 2005 with six numbers of STPs namely Lalpani 19.35 Mld, Malyana 4.44 Mld, Dhalli 0.76 MLd, Snowdon 1.35 MLd, North disposal 5.80 Mld and Summerhill 3.93 Mld. Total sewage treatment capacity of all the Six numbers of STP's is 35.63 MLD and design up to the period of 2016 and total length of sewage network is 308 km. In 2016, the length of sewage network was 189 Km and post 2016, 119 Km of sewage network has laid. Work of up-gradation of 3 Nos. of STP is in progress (STP Lalpani 14.2 Mld, STP Malyana 5.2 Mld and STP Dhalli 1.5 Mld on latest SBR technology). Tentative completion time period is January 2022. Also, the work of retrofitting of remaining 3 Nos. of STP (STP Snowdon, North Disposal and Summerhill) has been awarded in which electro-mechanical modification is required for better efficiency. At present, there are 16586 Nos. of sewage connection which are serving 29580 house hold. Only 1228 Nos. of septic tanks are present in town in the area of Totu and Majiath for which work of laying sewer pipe line is in progress. Also to treat the fecal matter of septic tank FSTP of 2.5 Kld has been constructed at STP Lalpni where septage of septic material can be treated. Construction work of New STP at Ashwani khad namely STP panthaghati 3.1 Mld has been awarded at for which land acquisition and site development work is in progress. Work of laying sewer network for the area of Mehali, Lower panthaghati, Beolia and Gussan has been awarded to various contractor and work has been started.

1.12 Economy and Industrialization

Industries in Shimla are mainly centre around the small-scale industries. Since Shimla is a hill resort, so the construction of big industries is quite impossible in Shimla due to number of valid reasons like the unavailability of adequate human resource and uneven terrain. Shimla being an ideal place for a getaway, the tourism industry in Shimla has emerged as a booming one. The tourism industry has been a major source of income for the people of Shimla. The overall scenic beauty of Shimla with the rolling hills and salubrious climate drags domestic as well as foreign tourists.

The various other industries of Shimla are:

1. Food industry
2. Wood-based industry
3. Fruit processing industry
4. Bakery Products industry
5. Implements of agriculture and horticulture

Table 6 : Settlement-wise Workforce Participation

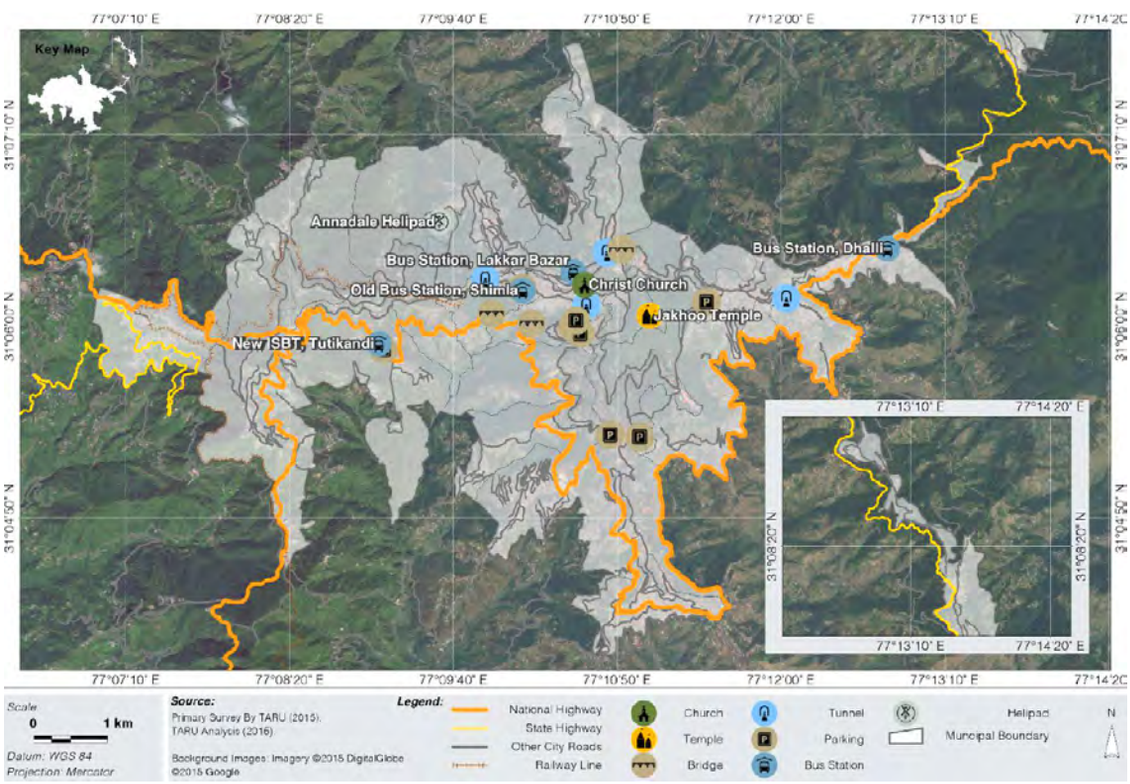
Category	M.C. Area	Ghanahatti SA	Kufri SA	Shoghi SA	Total
Cultivators	439	1199	2384	2474	6496
Agriculturists	149	115	107	172	543
Household Industry	504	52	42	106	704
Others	53312	2839	2914	2389	61454
Total	**54404**	**4205**	**5447**	**5141**	**69197**

Source: Development Plan for Shimla Planning Area, 2015

1.13 Transport and Communication Network

The economy of Shimla is dependent upon tourist activity; Shimla Local Transportation is therefore planned with the tourist as a core customer. Commercial buses in Shimla are either run by the Himachal Pradesh Road Transport Corporation (HRTC) or by private transport operators. Buses are available to transport passengers to every part of Shimla city. Shimla local transportation is concentrated in and on the vicinity of the Ring road of Shimla city. The Ring Road route covers the Main bus stand, Lift, Chhota Shimla, Kasumpti, Sanjauli, Lakkar Bazaar bus stand, Victory Tunnel and Boileauganj. Shimla Local Transportation also includes taxis. There are some restricted roads too in some parts of Shimla on which vehicles are not allowed. Himachal Pradesh tourism also runs a lift from Cart Road to the Mall.

Map 2 : Road and Rail Network in Shimla City



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

1.13.1 Surface Travel

Shimla is connected to the city of Kalka by one of the longest narrow-gauge railway routes still operating in India, the Kalka-Shimla Railway. This railway line starts at Kalka in the Himalayan Shivalik Hills foothills, passes through Dharampur, Solan, Kandaghat, Taradevi, Barog, Salogra, Totu (Jutogh) and Summerhill, before it finally ends at Shimla. Declared as a World Heritage by the UNESCO, the railway route is a main attraction for the tourists due to the Toy Train travel and scenic views. Connecting trains to major stations like New Delhi, Kolkata, Mumbai, Lucknow, Jaipur, etc. are available from Kalka and Chandigarh.

Two National Highways No. 22 and 88 pass through Shimla City. National Highway No. 22 connects Chandigarh to Shimla and NH No. 88 connects Shimla to district Kangra.

Table 7 : Road distances from Shimla to nearest Major Stations

Station	Distance	Approximate Traveling Time
New Delhi	343 Km.	10 Hours
Ambala	151 Km.	5 Hours
Chandigarh	119 Km.	4 Hours
Kalka	96 Km.	3 Hours

1.13.2 Parking Facilities

Shimla is a congested town and one can face parking problems if traveling to the city by own vehicle. There are 42 parking places within city, including the Lift parking, Near Hotel Holiday Home, Main Bus Stand, Railway Station Godown and the HP High Court. The MC Parking near Lift is the largest in Shimla town, and has a capacity of about 653 cars, while Sanjauli (400), Chhota Shimla (250), Tutikandi (400) are among the main parking places.

1.13.3 Air Travel

Shimla Airport is at Jubbarhatti, which is located 23 kms. from the city. Generally, scheduled flights to Delhi operate from this airport. Helicopter Services (Heli-Taxi Service) also operates to Chandigarh, Kullu and Dharamshala.

Shimla Airport, Jubbarhatti

2 Fire Hazard Profile of Shimla City

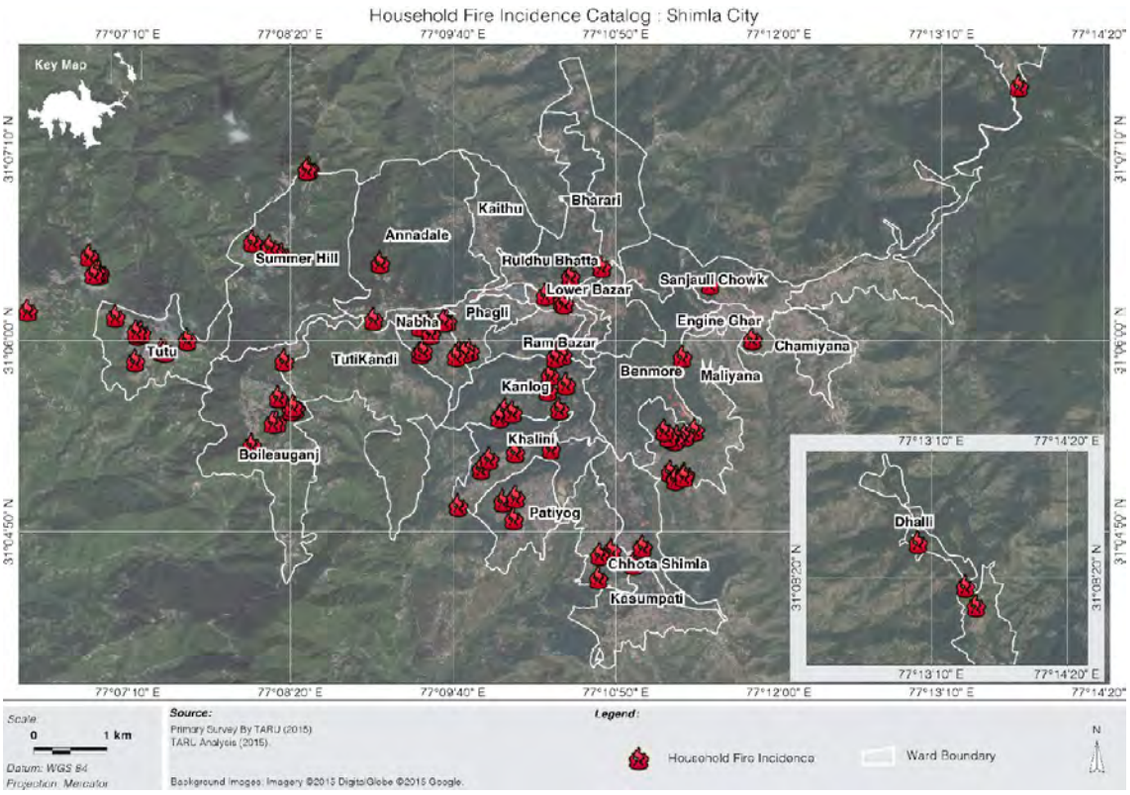
Fire is one of the most frequent hazards in Shimla city which has affected the city significantly in the recent times. There are two types of fires in Shimla – urban fires that originate from anthropogenic activities and forest fires, which originate from anthropogenic activities as well as natural causes like lightening over a mature patch of forest. Forest Fires are not very much prominent in Shimla City. In Shimla the old historical buildings are made up of wood and also in present buildings as well the flooring etc. is made up of wood. Every winter household's fires are very common which caused due to overheating, electric fires, etc. The main cause behind the fires in Shimla are human induced. The old wooden structures, congested construction, poor and old wiring and resultant short circuit, rising temperature and extended dry spells are some of the main reasons behind fire hazard in the city. Fire department is mainly responsible for rapid assessment phase.

In Shimla, there are three fire stations, situated on the Mall, Chotta Shimla and Boileauganj and the department is devoid of adequate number of staff personnel and equipment. The population within the city is increasing but their safety measures are not equally growing. Although the use of GIS has started but it is at a much initial stage and the use of satellite imageries are negligible. In context of fire the construction of houses or government departments are not based on "National Building Codes". The high rise building like Secretariat, High Court, Municipal Corporation etc. are not fully equipped to response incase of a fire. After a fire incident no proper damage assessment is conducted by the responsible officer's and only a tentative assessment is made.One of the common reason for domestic fire is the mishandling of cooking fuel and live fire. Following is a summary of the nature and scale of two major types of fire events that occur in Shimla city.

2.1 Urban Fires

There have been many incidents of fire in Shimla city. A major reason for these fires to spread and cause huge damages is the location of houses or shops in close proximity. Many a times, these fires were observed in the densely-packed shopping area in Lower Bazar (January 9, 2016 at 3.00am). Some of the well known fire accidents within Shimla city are: Lower Bazar fire of 9 January, 2016; AG Office Building (Gorton Castle, January 28, 2014); Deepak project fire (Minto Court near Indian Institute of Advance Studies, November 2, 2014). While the losses in these accidents run into crores of rupees, the heritage and architectural loss is irreplaceable. Most of the heritage buildings in Shimla city were constructed during the British rule. The incidents of fire started in 1875 when Upper Bazar located on The Ridge was gutted. In the past 144 years, more than 50 majestic buildings had been razed in fires. A lot of money is spent on the name of procuring safety measures and maintenance, but still Shimla is losing these heritage buildings one by one. From the primary survey conducted in the City Hazard Risk & Vulnerability Analysis, 28% of the households have experienced some form of fire accidents, but many of them did not face any losses. The survey respondents have memory of 12 incidents at the neighbour level which caused losses within the city – right from 1947 to 2015. Out of the sampled households, there are 16 houses which are having exposed fire in the kitchens, while rest of the households use non exposed fires, like induction, microwave and other kitchen utilities. The vulnerability of the households in terms of fire is still high, from the point of view of access to fire services.

Map 3 : Household Fire Hazard Map of Shimla city



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

2.2 Forest Fires

The forests of western Himalayas are more vulnerable to forest fires as compared to those in eastern Himalayas. Frequency and intensity of forest fires has increased since 1990 in the region. As one of the most frequent hazards in Himachal Pradesh, Forest fires are an annual phenomenon in the state. Fire season starts from mid-April, when there is no rain for months, forests become littered with dry senescent leaves and twinges, which could burst into flames or ignited by the slightest spark. In June 2007, forest fire destroyed 2,000 hectares of forest in the state (SAARC-DM Center, 2007).

Categories of Forest Fires

Forest fire can be defined as an uncontained and freely spreading combustion which consumes the natural fuels i.e. litter, grass, dead branch, wood, snags, logs, stumps, weeds, brush, foliage and to some extent green trees (Brown and Davis, 1959). Basically forest fires have been categorized in to three types:

(i) **Ground Fires:** Ground fires are not easily predictable as it spreads within the canopies rather than on top of organic matter. It consumes organic matter like duff, musk or peat present beneath the surface litter of the forest floor. It has unique characteristic of having a smoldering edge with no flame and little smoke. Ground fires are most hard to handle and there should be proper policy and practice for control agencies.

(ii) **Surface Fire:** Surface fire is characterized by a fast moving fire, which consumes small vegetation and surface litter along with loose debris.

(iii) Crown Fire: Crown fires advances from top to top of trees or shrubs without any close link with surface fire. It is fastest to spread and most destructive for trees and wildlife.

Causes of Forest Fires

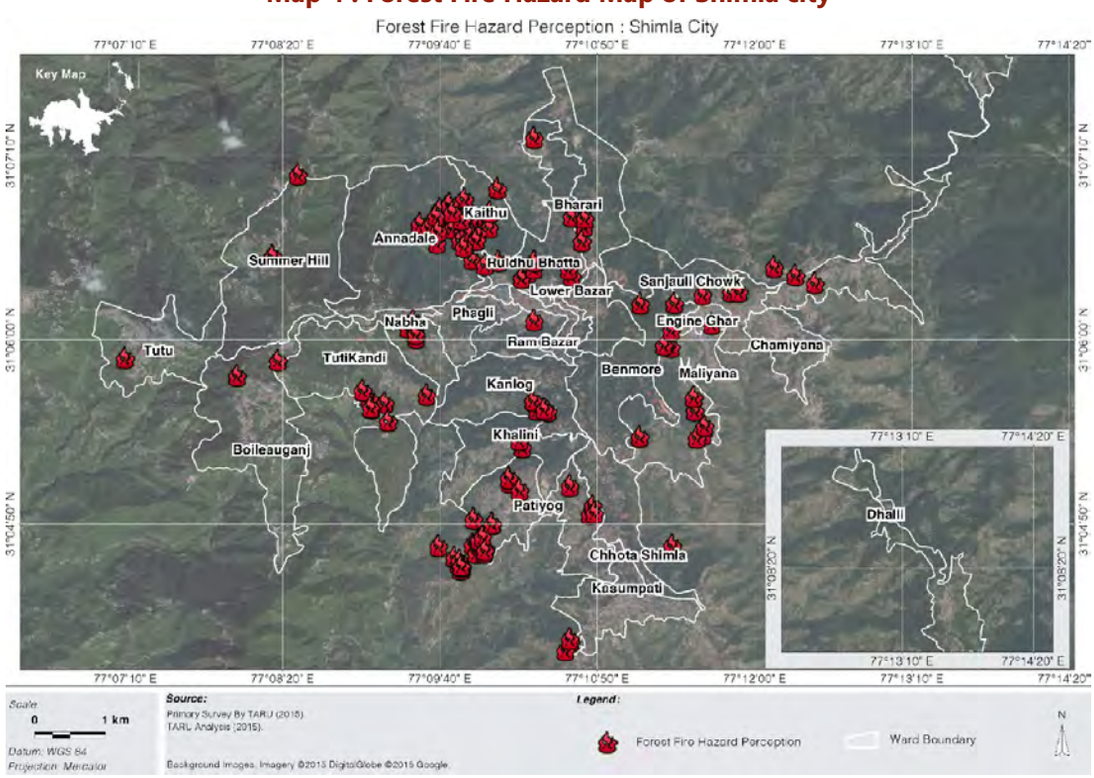
Basically causes of forest fire have been classified into three main categories:

(i) Natural: These are the fires which cannot be averted as these occurs naturally due to lightning, rolling of stones and rubbing of dry bamboos due to strong wind.

(ii) Intentional/Deliberate: Mainly intentional fires are created for the better growth of fodder grass. These fires are also been set by villagers to drive away the herbivores animals, which destroy their crops. Villagers also set fire for collecting forest products like honey, gum, mahua flowers etc. Railway transport also causes forest fires occasionally. There is less control over fires which are caused deliberately by local dwellers.

(iii) Un-intentional/Accidental: Unintentional/ accidental fires are the result of carelessness of human beings such as throwing of burning matchstick or cigarette. Other fires, which occur accidentally, are the spread of fire from labour camps, from picnic sites and other recreational areas due to human activities. These types of fires are controlled by certain parameters like its proximity to settlements and distances from roads. Although it is not easy to account natural or deliberate fires but the areas prone to fires can be detected and mapped.

Map 4 : Forest Fire Hazard Map of Shimla city



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

3 Vulnerability of Shimla City to Fire Hazard

While Shimla city has multi-faceted vulnerabilities to various hazards, for the purpose of the Fire Disaster Management Plan, we are focusing more on the Physical Vulnerability of the city. A brief account of the same, highlighting the vulnerability related to the buildings is given below.

I. Building Vulnerability

Vulnerability of the population and the building stock are the most exposed features of a city. Social scientists classify vulnerability into two classes- intrinsic vulnerability and extrinsic vulnerability. Intrinsic vulnerability is the inbuilt characteristic(s) of the society, while extrinsic vulnerability is caused because of the extrinsic influences, like landslide, flood, earthquake, etc. For example, the intrinsic vulnerability of a building is determined based on its own structural elements, i.e. strength of the columns, presence of foundation, regular horizontal bands, etc. Similarly, for population, it includes the socioeconomic vulnerability of the people, like poor health conditions, illiteracy, poverty, lack of male members in a family, higher share of elderly population or kids, etc. Extrinsic vulnerability refers to the susceptibility of the building to the impacts of any external capable of causing damage.

There is a popular saying "earthquakes do not kill people, but unsafe buildings do". It precisely highlights the importance of strong buildings and the impact of poor building construction on life and property. The traditional housing typologies that evolved in Himachal Pradesh have been known for its strength to withstand all natural calamities. However, the latest adoption of building materials and construction practices, are foreign and have been causing problem. RCC is one of the popular roofing materials that is used in all the new constructions in the city. However, there is a lack of trained engineers and masons to execute such work. Masons having the expertise and knowledge of constructing the traditional buildings have adapted themselves to the changing conditions and have become gap fillers in the RCC construction. The labour force for these constructional activities are brought in from the plain areas, who lacks knowledge or experience in managing slopes and dealing with construction in these areas.

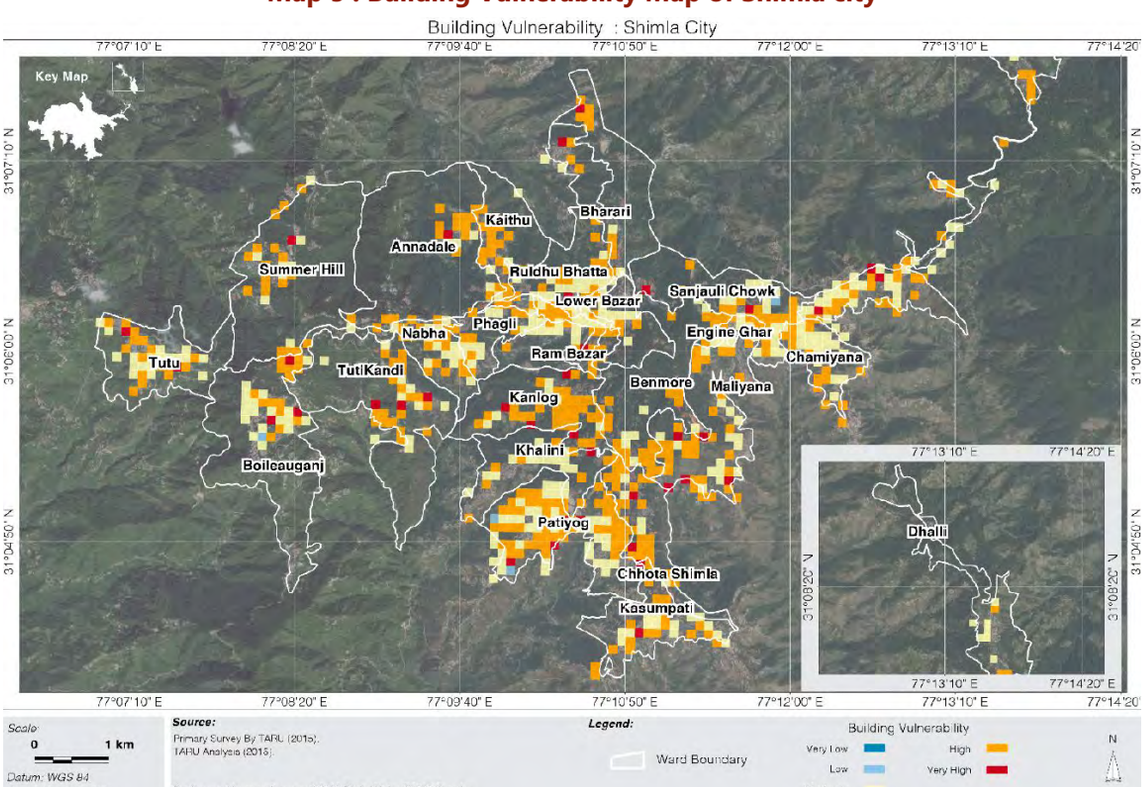
Sanjauli area of Shimla city dotted by recently done construction of RCC Buildings

Details of the foundation, structural elements, over-hanging loads, building floor plan, distance between adjacent buildings, presence of horizontal bands, structural configuration and irregularities, age of the building, etc. are vital aspects of the safety of buildings. These parameters were used in the Building Vulnerability Survey conducted in the city during July–August 2015, covered a total of 2,795 buildings, including important government buildings, public schools and hospitals and also a selected sample of 1,547 residential buildings. The findings of the same are illustrated in the Map 5.

Dilapidated Stock

2% of the buildings (both residential & non-residential) are already dilapidated (based on HRVA 2016 carried out in 25 wards). Rest of the stock is either good (80%) or livable (about 18%). In terms of the age of the housing stock in various wards of Shimla, Kaithu, Annadale, Tutikandi-Badai, Phagli and Kasumpti wards have a higher share of dilapidated stock.

Map 5 : Building Vulnerability Map of Shimla city



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

II. Access to Major Services

When disasters strike, the low income people are likely to have very limited access to basic services and facilities such as water supply, sanitation, healthcare, communication, transportation, emergency services, etc. A number of barriers, especially the policy and planning related processes, exclude some individuals and groups from access to and use of these services and resources and from participation in economic activities. Different communities may face similar risks of exposure to the negative effects of environmental and man-made hazards, but their actual vulnerability is dependent on their social conditions, civic and social empowerment and access to mitigation and relief resources. People's access to these services & facilities was analysed in the Social Vulnerability Analysis carried out in 2015.

III. Access to the Main Road

Shimla is a hill station with a majority of settlements located on steep slopes. As most of the buildings are constructed on the contours of steep hills, this makes a big proportion of people vulnerable to various hazards due to lack of access to the motorable roads. Table 8 shows the households which do not have an access to their house from the motorable roads (shown in red colour), which in turn enhances people's inability to escape in case of any eventuality. So these households need to be considered while making any preparedness plans of emergency management plans.

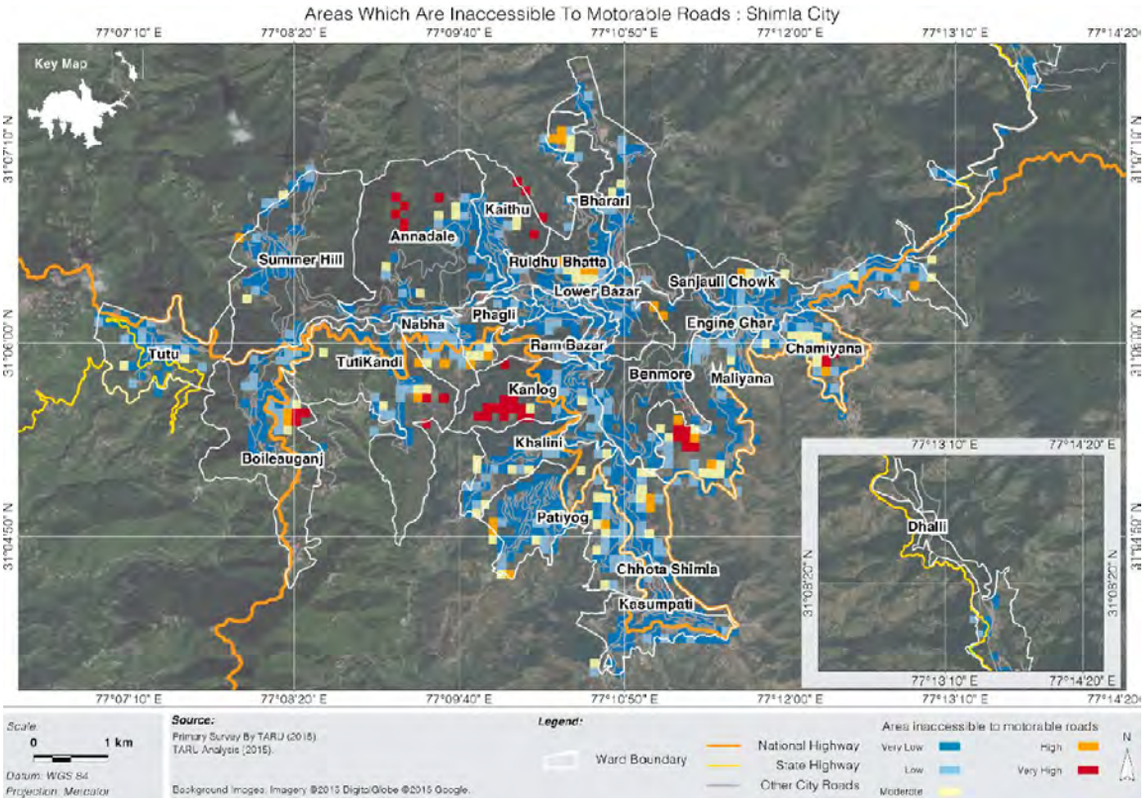
Wards like Lower bazar, Ruldhu Bhatta, Kaithu, Chamiyana, Phagli have more than 80% of the households staying away from the motorable road, who has to use intricate network of staircases and narrow walkways to reach their houses. On the other hand, Ram Bazar, Boileauganj, Sanjauli chowk, Dhalli, Kasumpti, Chhota Shimla and Pateog have majority of the households closer to the main motorable road.

Table 8 : Percentage of households with access from Motorable Road

Ward No	On the main road		Interior from the road		Total	Ward name
	No.	Percentage	No.	Percentage		
1	17	32.7	35	67.3	52	Bharari
2	9	11.1	72	88.9	81	Ruldhu Bhatta
3	10	15.9	53	84.1	63	Kaithu
4	20	39.2	31	60.8	51	Annadale
5	34	35.4	62	64.6	96	Summer Hill
6	35	25.9	100	74.1	135	Totu
7	61	48.0	66	52.0	127	Boileauganj
8	9	25.0	27	75.0	36	Tutikandi-Badai
9	17	33.3	34	66.7	51	Nabha
10	6	12.2	43	87.8	49	Phagli
11	16	34.0	31	66.0	47	Krishna Nagar
12	9	52.9	8	47.1	17	Ram Bazar,Ganj
13	2	10.0	18	90.0	20	Lower Bazar
14	16	43.2	21	56.8	37	Jakhu
15	6	37.5	10	62.5	16	Benmore
16	14	30.4	32	69.6	46	Engine Ghar
17	36	52.9	32	47.1	68	Sanjauli Chowk
18	47	48.5	50	51.5	97	Dhalli
19	31	18.5	137	81.5	168	Chamyana
20	33	30.8	74	69.2	107	Maliyana
21	65	41.7	91	58.3	156	Kasumpti
22	36	44.4	45	55.6	81	Chhota Shimla
23	104	55.9	82	44.1	186	Pateog
24	44	37.3	74	62.7	118	Khalini
25	32	33.7	63	66.3	95	Kanlog

Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

Map 6 : Areas accessible to Motorable Roads in Shimla City



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

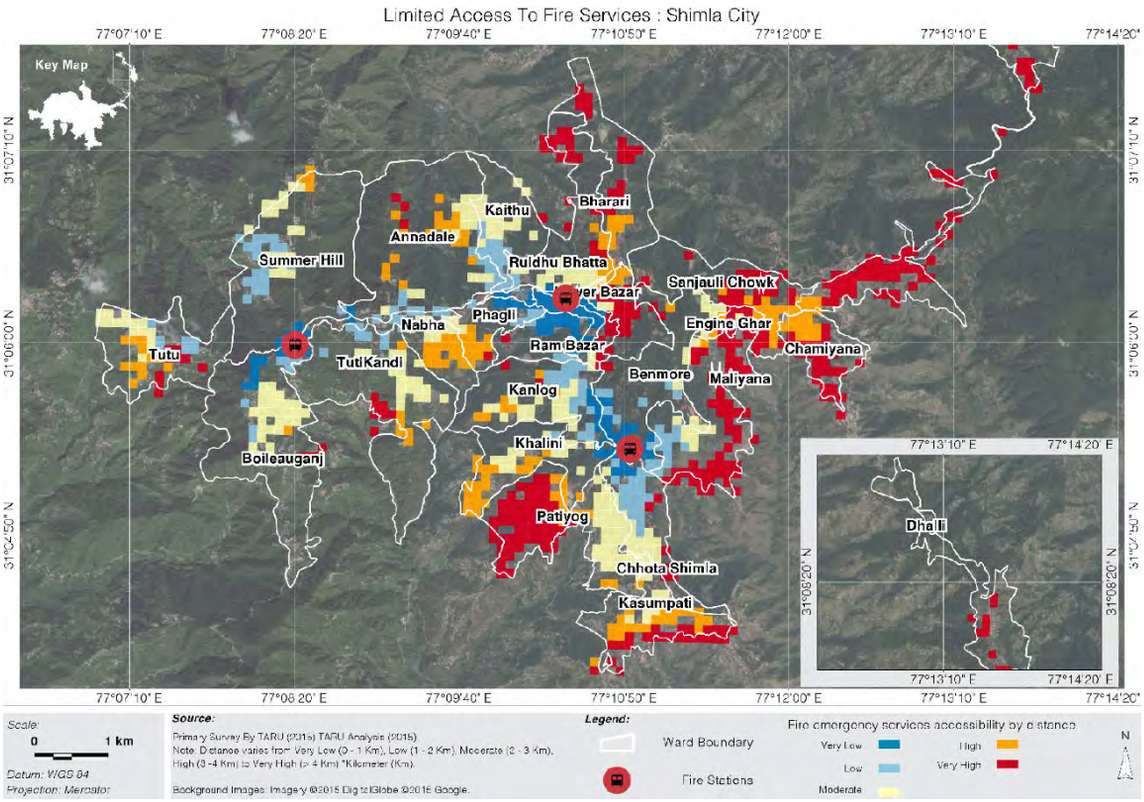
IV. Access to Fire Service

There are three fire stations within the city boundary. However the access to individual houses is very narrow and many of the times not accessible at all. In understanding the accessibility of the services, two components are important - Distance from the service and time taken to access the service. Distance to the nearest fire service from the households is explained below.

Table 9 : Distance from nearest fire station to households

Distance from Fire Service in Meters	No. of Households	Percent
500	185	5.9
1000	152	4.9
2500	378	12.1
5000	1701	54.4
7500	523	16.7
10000	138	4.4
15000	49	1.6
Total	**3126**	**100.0**

Map 7 : Distance from nearest fire station to households



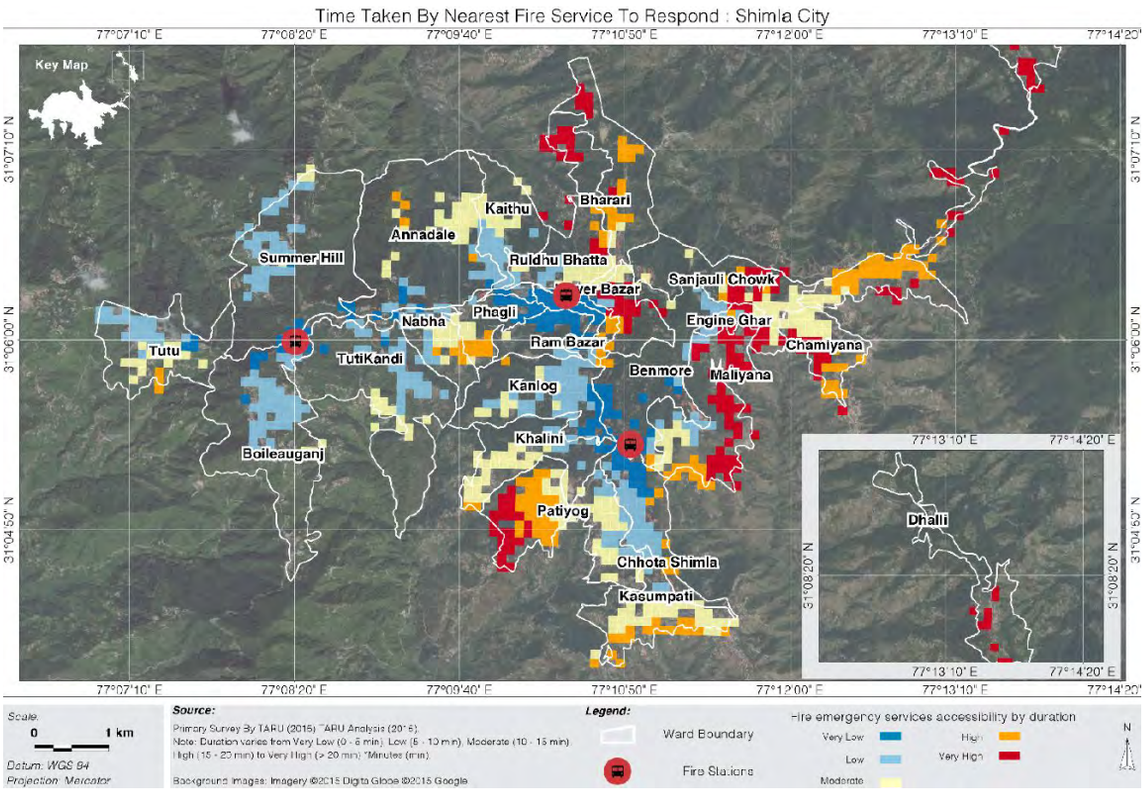
Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

Based on the type of the access roads, households are assessed to the distance to the nearest motorable road. This is important in order to understand their evacuation time in case of a disaster. So as per the analysis carried out during the HRVA of Shimla city, about 6% of the households are located at a distance more than 500 mt. from the main access road, as shown in Table 9. Special provisions need to be made for the evacuation of the households.

Table 10 : Time taken for Fire Service to reach the Houses

Time taken in Minutes	No. of Households	Percent
0	2	0.1
5	403	12.9
10	942	30.1
15	851	27.2
20	504	16.1
25	282	9.0
30	99	3.2
60	43	1.4
Total	**3126**	**100.0**

Map 8 : Time taken for Fire Service to reach the Houses



Source: Hazard Risk and Vulnerability Assessment (HRVA) of Shimla City

4 Capacity Assessment for Firefighting in the City

For firefighting and rescue vehicles and specialized equipment gap analysis at the operational Fire Stations and the additional Fire Stations in urban and rural areas, the following criteria have been followed, which have been basically taken from the Standing Fire Advisory Council (SFAC) norms and minor changes have been made with expert opinion, for optimization of resources. Existing capacities in the Fire Stations located within Shimla city are given in Annexure 02 (A), 02 (B) and 02 (C).

1. **Pumping Unit:** For counting of existing pumping units at various Fire Stations, equipments such as Fire Tender, Water Bowser, Water Mist Mini Fire Tender, Foam Tender, Crash Fire Tender, Fire Engine, Jumbo Tanker, and Multi-purpose Tender have been counted as one pumping unit. The SFAC criteria with some modifications have been proposed for estimating the requirement of pumping units. Accordingly, one pumping unit per 50,000 populations (subject to minimum one) up to 3 Lakhs population has been considered. For population of more than 3 Lakhs, one additional pumping unit per Lakhs of population has been considered. For example, if the population is 3,50,000 or more but less than 4,50,000, there should be 7 pumping units. At Fire Stations, where pumping unit requirements are coming to 2 or more units, half the units will be Water Tender and half the units will be Water Bowser, for example, for 2 pumping unit requirement, one will be Water Tender and one Water Bowser, however, for 3 pumping unit requirement, 2 will be Water Tender and 1 will be Water Bowser. However, in hilly States, the criteria have been further relaxed.

   Note: Pumping units are considered as a complete unit with water carrying capacity pumping unit, however, trailer fire pump with towing vehicle or a jeep fire engine, QRT with mist unit, or motor cycle with mist set have not been considered as a pumping unit. QRT with mist unit or motor cycle with mist set has been considered as a unit to cut response time in congested areas in urban areas.

2. **Foam Tender:** For those Fire Stations, in whose jurisdiction small industrial area also lie, one Water Tender should be replaced with Foam Tender.

3. **DCP Tender:** Minimum one per district or one for 8-10 Fire Stations. Fire Stations, having a large industrial plot area (in their ideal jurisdiction) of above 1.0 - 3.0 sq km, should have additionally one DCP tender. For industrial areas more than 3.0 - 6.0 sq km, there should be 2 DCP Tenders.

4. **Advanced Rescue Tender:** One per district (minimum) up to 10 Lakhs population, and one additional unit for every 10 Lakhs urban population.

5. **Hydraulic Platform/ALP/TTL:** One per district depending upon the presence of high-rise buildings (height more than 15 m). Additional unit is to be provided for districts having a large number of such building blocks. It may be noted that Hydraulic Platform/ALP/TTL is not a replacement for in-built systems in high-rise buildings. Moreover, equipment is heavy and maneuvering on roads becomes difficult, where there are overhead electrical lines.

6. **HAZMAT Van:** Hazmat van is used rarely and is a very costly equipment requiring highly trained manpower. Hence, to optimize on resources and manpower, HAZMAT van is not recommended for future procurement in the city. However, for that purpose, an Advanced Rescue Responder is proposed (at Sr. No 4), which will have equipment to handle hazardous material release.

7. **Crash Fire Tender:** Crash Fire Tender is not recommended for the State Fire and Emergency Service. Instead, for Fire Stations in the funnel area on either side of the airport, one WT should be replaced with Foam Tender depending upon the State Policy.

8. **BA Van, Light Van and Control Van:** One each per district. However, to optimize on resources and manpower, we are proposing a BA Van- cum-Light Van – cum- Control Van.

9. **Hose Tender:** One per district (minimum) or one for 8-10 Fire Stations.

10. **Trailer Pump:** Though Trailer Pumps are prescribed in SFAC norms, it is not recommended for future use, as this needs an additional towing vehicle. In place of this, procurement of Portable Pumps are recommended, which will be part of a Fire Tender (Specialized Equipment at Sl. No. 12).

11. **QRT:** One each at Fire Stations serving a population density (total population in the FS jurisdiction/area of jurisdiction, in sq km) above 30,000 persons/sq km in metro and big cities, above 15,000 persons/sq km in other cities, or in congested areas based on field-survey.

    Note: The criteria of population density has been relaxed for hilly State from 15,000 person/sq km (in plains) to 5,000 person/sq km in the Fire Station jurisdiction.

12. **Motorcycle with 2-water mist sets:** One each at Fire Stations serving higher population density or in congested areas with each QRT.

13. **Fire Boat:** One each at selected Fire Stations, in whose jurisdiction some inhabitated areas exist near water bodies, such as lake, major river, sea, where fire fighting can be better performed, through watercourse.

14. **Ambulance:** It is seen that Ambulance services are also with some of the state fire services and in few other states this is looked after by the Ministry of Health department of the states e.g., Rajasthan state has a modern fleet of Ambulances (108), well equipped with GPS, medical equipments and staff under National Rural Health Mission (Rajasthan), CATS (Centralized Accident Trauma Service, Ministry of Health) in case of Delhi state.

    It is observed during visit to the Fire Stations by the RMSI team that wherever the Ambulance are available with fire services, they neither have the Paramedic staff, nor adequate life support/normal equipments, and cannot be considered as an efficient system. It is therefore felt that either ambulance service should be run by Health Department through various hospitals / health centers or provide fully trained staff to fire services with properly equipped Ambulances. Accordingly, cost of the ambulance is not included in the gap analysis of the present study. However, the ambulance cost may be added, in case, it is decided in a particular state that Ambulance service should be part of fire services.

15. **Educational Van:** One per district and one additional unit for every 30 Lakhs district population.

    At rural Fire Station/ Fire Post, if the estimated pumping unit is two, then one water tender with a QRT on pickup truck having 500 - 600 liters of water mist capacity along with a motor cycle with two water mist backpacks will be provided. This will help in quick response, as majority of roads inside the city are small in width and congested. This will also help in optimization of resources. For rural Fire Stations/ Fire Posts where less than 10,000 persons are residing within its jurisdiction, QRT and motor cycle with two water mist backpacks has only been recommended.

It may be noted that if a fire is responded to immediately, it may not flare-up into large fire; hence, QRT and Motorcycle are considered as a quick responder and not as full-fledged fire units. In case of large fires, nearby Fire Station(s) will provide support with Water Tenders and Water Bowsers.

For reserve requirement, RMSI estimated reserve requirement of 20% at district level, and these will be distributed to individual Fire Stations by the concerned fire officials.This will help in optimizing the additional requirements of minimum one reserve at each Fire Station

Specialized Equipment required at the Fire Stations (as per the SFAC):

Specialized equipment for Fire Stations in urban areas shall be provided as per the following criteria:

1. **Hydraulic Rescue Tool:** One for each Fire Station depending upon the seismic Zone IV and V, or Fire Station having urban population more than 1.5 Lakhs in its ideal jurisdiction including Hydraulic Cutter, Hydraulic Spreader, Hydraulic Pump, Power Wedge, and Hydraulic Rescue Ram depending upon the seismic Zone IV and V.
2. **Combi-Tool:** One Combi-tool set shall be provided with each fire-fighting vehicle.
3. **B.A. Set with BA Compressor:** Four B.A. Sets per fire fighting vehicle with minimum one compressor per Fire Station.
4. **First Aid Box:** One for each fire fighting vehicle (minimum two at each Fire Station) with regular replacement of expired medicines.
5. **Thermal Imaging Camera:** One for each Fire Station depending upon the seismic Zone IV and V, or Fire Station having urban population more than 1.5 Lakhs in its ideal jurisdiction.
6. **Personal Protection Equipment (PPE):** One Set for each pumping unit or a minimum of two for each Fire Station.
7. **Hydraulic Chain Saw/Cutter for Wood:** One for each Fire Station.
8. **Electric/Petrol Chain Saw/Cutter for Wood:** One for each Fire Station.
9. **Electric/Petrol Chain Saw/Cutter for Concrete:** One for each Fire Station.
10. **Hand Held Gas Detector:** One piece per Vehicle.
11. **Victim Location Device (Acoustic):** One for each Fire Station depending upon the seismic Zone IV and V, or Fire Station having urban population more than 1.5 Lakhs in its ideal jurisdiction.
12. **Portable Pump:** One for each fire fighting unit.
13. **Floating Pump:** One for each Fire Boat.
14. **Smoke Exhauster/PPV:** One per Fire Stations located in urban areas (minimum one per district).
15. **Pneumatic Lifting Bags:** One for each Fire Station depending upon the seismic Zone IV and V, or Fire Station having urban population more than 1.5 Lakhs in its ideal jurisdiction.

16. **Diving Suit (Dry Type):** Two for each Fire Boat depending upon the Fire Stations located in extreme climatic condition where wet type of diving suit cannot be used.
17. **Diving Suit (Wet Type):** Two for each Fire Boat for Fire Stations located in normal climatic condition.
18. **Inflatable Lighting Tower:** One per Fire Station.
19. **High Capacity LED Torch Light:** One piece per vehicle.

Note: Other smaller equipments such as ropes, Fireman Axe, Small Hammer, different Branches/Nozzles, Foam Compound are standard items for any Fire Station/post.

For rural Fire Station/Fire Post, following specialized equipment has been recommended:

1. **B.A. Set with BA Compressor:** Two B.A. set per fire fighting vehicle with one compressor per Fire Station/post.
2. **Personal Protection Equipment (PPE):** One set per fire fighting vehicle.
3. **Electric/Petrol Chain Saw/Cutter for Wood:** One per Fire Station/post.
4. **Hydraulic Chain Saw/Cutter for Wood:** One per Fire Station/post.
5. **Portable Pump:** One for each fire fighting unit.
6. **Inflatable Lighting Tower:** One per Fire Station.
7. **High Capacity LED Torch Light:** One piece per fire fighting vehicle.
8. **First Aid Box:** One per fire fighting vehicle.

For reserve requirement, RMSI estimated reserve requirement of 20% at district level, and these will be distributed to individual Fire Stations by the concerned fire officials. The replacement of condemned / major repair (off road) vehicles as well as instruments from operating Fire Stations can be accounted as reserve and these will be distributed to individual Fire Stations by the concerned fire officials. This will help in optimizing the additional requirements of minimum one reserve at each Fire Station.

Communication Equipment:

For better coordination between Fire Station and fire fighting staff, communication plays an important role. Hence, there is a need that each fire vehicle and Fire Station is equipped with a communication device. Accordingly, following communication equipments for urban Fire Station are recommended:

1. **Static Wireless Set (VHF):** One set at each Fire Station.
2. **Mobile Wireless Set (VHF):** One per vehicle.
3. **Walky-Talky:** One per vehicle.
4. **Megaphone:** One set per Fire Station/post.

5 Key Preparedness Measures for Fire Risk Management

The Department of Fire Services, Government of Himachal Pradesh has enlisted several measures for disaster preparedness at different levels of the department. While these measures pertain to preparedness for multiple hazards, they focus mainly on Fire hazard as it is the most common hazard the department deals with.

1. Identify potential emergency situations. Make references to contingency specific action plans for the same.
2. Develop fire station operational plan during the time of emergency situation based on local vulnerability and risk assessment.
3. Establish and maintain communication with the State and District Emergency Operations Center, and other control rooms.
4. Disaster Management Action plan will be prepared by each fire units / station based on the local vulnerability and outlines various emergency responsibilities of staff, evacuation routes and evacuation assembly areas, emergency supplies, and emergency notification plans.
5. Determine the status of all department emergency operation.
6. Maintenance of firefighting equipment's etc. and installation of fire alarm and water pumps like hydraulic, sprinkler etc.
7. Determine the impact of the emergency on the fire department's operational capability.
8. Identify the most vulnerable areas to fire and other disasters and create awareness and training among the people on fire safety measures, prepare the force for emergency search and rescue operation.
9. Implementation of fire safety measures in the private, government and own buildings and establishments.
10. Provide regular training in primary health care and in the evacuation, search and rescue to the fire brigades to make them alert.
11. Periodically inspect the vulnerable areas like hazardous chemical and other industries.
12. Stockpile and preposition sufficient number of firefighting equipment and vehicles to combat any emergency.
13. Stockpile and preposition other necessary repairing material at a safe place for the immediate repairs.
14. Keep the equipment, telephone, telex, wireless etc. functional and ready.
15. Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.
16. To involve in disaster management activity, identify the voluntary workers from the NGOs.
17. Conduct regular mock drill attach with various education institutions.
18. Procurement of advanced emergency management equipment and appliances to combat all types of disasters.

19. Ensure proper functioning of all equipment.

20. Make a database of existing firefighting services and facilities provided by private agencies.

21. Be aware of MAH units and other potential hazardous installations and level of possible emergency required.

22. Prepare to deal with leakage of flammable toxic substances.

23. Ensure, at disposal, the list of adverse effects of chemicals and antidotes / methods to deal with an emergency involving each chemical. This is prepared by Department of Industrial Safety and Health.

24. Review the adequacy of existing fire prevention arrangements in each MAH and other hazardous units before and after the installations. Share the report with Department of Industrial Safety and Health.

25. Identify roads and routes of access and escape to and from MAH and other potential hazardous units.

26. Assessing staffing requirement of the fire department. A chain of command should be established to minimize any confusion. Personnel must be identified to coordinate the emergency-response actions.

6 Measures for Fire Risk Mitigation

6.1 Structural Measures

a. Strengthening of the Fire Department:

The staff strength of fire department is inadequate keeping in view the fire vulnerability of the town. Also, the department has special needs to match the requirement of the town. Firefighting equipment and vehicle capable of moving in the narrow lanes of the town needs to be added to the fleet of the Fire Department.

b. Decongestion of Critical Locations:

Areas such as Lower Bazaar, Ram Bazaar and other such locations which are vulnerable to fire hazard need decongestion. The temporary structures need to be removed at these locations.

c. Identification of Vulnerable Buildings:

Shimla Town has very old and important structures which have generally a lot of wood in the shape of building content. Fire safety concerns of these building should be addressed.

6.2 Non-Structural Measures

a. Enforcement of Building Codes on Fire Safety:

Building Codes on Fire Safety (BIS Codes) must be made compulsory and strictly enforced. No structures complying with these codes housing large number of occupants such as offices, hospitals, schools etc. should be allowed to function till it adheres to these codes. Regular mock drills on fire safety should be held in all building housing large number people.

b. Hands on Training on Fire Equipment:

The school children, government functionaries should be given hands-on training to handle fire-fighting equipment.

c. Community Awareness and Preparedness:

The community at large should be educated about dos and don'ts of fire hazard.

d. Risk Transfer:

Entire risk cannot be mitigated. Whatever risk cannot be mitigated must be transferred by way of risk insurance. Insurance coverage is available against all the major hazards and these needs to be promoted amongst the stakeholders.

7 Fire Response Plan

7.1 Fire Response Plan for Shimla City

Fire is a common occurrence in Shimla especially both during summer and winter season and results into multiple losses of life and large property damage. Some of the reasons behind the outbreak of fires in the city are high summer temperature, lightning, short circuit, negligence, accidental fire and kitchen-fires, cooking fire etc.

Measures to be taken by City Disaster Management Cell in case of Fire

(A) Real Time Information of Fire

(i) The Fire Department is the Nodal Agency which is designated to monitor the fire incidents which include both natural and human-induced fires. The Fire Department can detect fire at its own level or the incident of fire is reported to the department. The local people, media and environmental agencies can also report about any fire incident to the fire stations or to the City Disaster Management Cell which can further alert the key responders and vulnerable population.

(ii) Forest Department shall notify the forest fire incident at the nearest fire station or to the City Disaster Management Cell and key responders along with some preliminary information on location, damage caused, reason behind the fire outbreak etc.

(B) Impact Assessment to be carried out in association with DDMA Shimla

(i) The Fire Department (Shimla) would be fully activated and the pre-designed response plan should immediately be triggered.

(ii) The Municipal Corporation, Shimla and City DM Cell shall gather information about the deaths, injuries and damages to the infrastructure and property.

(iii) The City Administration, if needed, will conduct a survey to determine the scope of damage, causalities, and the status of key facilities.

(C) Emergency Response

(i) The Fire Department shall rush its fire tenders to the site of fire.

(ii) The Police department shall control traffic and crowd and provide free access to the fire tenders and its personnel. The police shall further ensure that the crowd does not cause any hindrance in the functioning of the fire department.

(iii) The Electricity Department shall disconnect power supply to the affected area.

(iv) Irrigation and Public Health Department shall provide water through pipelines, hydrants, sprinklers etc. to control the fire.

(v) Municipal Corporation, Shimla along with the Fire Department shall work out, if needed and same shall be coordinated.

(D) Deployment of Search and Rescue (SAR) Teams

(i) At the time of a fire incident to minimize the losses, the Disaster Management Cell, Municipal Corporation will deploy local Search and Rescue teams of Civil Defence, Home Guards, persons from fire department and local volunteers etc. to rescue people from the immediate area of smoke and/or fire.

(ii) The personnel of the Police Department will be deployed by the City Administration for search and rescue operations as per assessment of the situation.

(iii) Municipal Corporation, Shimla and the entire City Administration along with Fire Department will mobilize local response and will identify areas and access the requirements for the urban search and rescue operations. Requirement of outside response, if need be, shall be worked out and coordinated.

(E) Emergency Medical Relief

(i) The SDRF and the personnel of City Disaster Management Cell, Municipal Corporation, Shimla, local volunteers who are also trained in the emergency medical response shall be deployed for first medical response immediately.

(ii) The Hospitals/CMO/Department of Health and Family Welfare will dispatch a team of medical specialists with adequate medicine to the disaster site with medicines etc. and also alert the hospital to be prepared to receive the victims. 108 medical responses will also be activated.

(F) Emergency Logistics

(i) The firefighting equipments like fire extinguisher, fire blankets, foam fire buckets, etc. will be required during a fire incident to control and stop the fire. The Fire Department shall arrange the same in association with SDM Urban.

(ii) The necessary equipment will also be mobilized for search and rescue of the trapped people in fire and in thick smoke.

(iii) The Irrigation and Public Health Department will move its resources – men and material to help douse the fire.

(iv) The equipment available with City Disaster Management Cell/City EOC, Municipal Corporation, Shimla, Fire Department will also be mobilized as per requirement.

(G) Repair and Restoration of Road, Power, Water and Telecommunication

(i) The MC Shimla and Public Works Department will repair and restore the affected roads. The department may take assistance of ESF agencies, if required.

(ii) The damaged water supply, electricity and telecommunication lines will be restored by the respective departments forthwith.

(iii) The I & PH Department would restore water supply to the affected areas and would also ensure supply of water through other means till water supply is not fully restored through pipelines.

(iv) HP SEB Limited would take immediate steps for restoration of electricity supply to the affected areas.

(v) During a fire incident the communication network may be destroyed. The BSNL and other service providers would take immediate steps to restore communication in the affected areas. The ESF departments for communication would also provide communication facilities for disaster communication and relief.

(H) Supply of Relief Material to the Affected Areas

(i) The City Disaster Management Cell, M.C. Shimla would assess requirement of relief material and mobilize the local reserves to the affected area. It will also place its requirement for relief material to the District and the State authorities.

(ii) The ESF departments at city level would arrange to supply relief material to the affected locations.

(iii) Provision of temporary shelter will be made for those persons whose houses have been affected severely and for those whose houses have been damaged completely.

(I) Environment Impact Assessment

(i) Department of Environment and Forest will get the environment impact assessment carried out for the affected area.

8 Ward-level Community Disaster Response Teams

8.1 Introduction to the Community Disaster Response Teams

Disasters can strike anytime anywhere and cause destruction of life and property at large. It has been observed during past events that more destruction is caused in the absence of preparedness. Most of the times communities are dependent on Government agencies and rescue teams for disaster response which delays the response time and many precious lives are lost because of this. Nobody knows when a disaster will strike, that is why emergency preparedness, community education, and constant vigilance are the essential steps to keep citizens safe. Community managed disaster response is more effective to reduce the loss. One of the best ways of preparing citizens for a possible disaster is to involve them directly in the process. To promote and strengthen the locally available response, Municipal Corporation can take action by forming a City Disaster Response Team (CDRT) at ward level. This team will be a locally available quick response to any disaster or emergency. This model can be established as a functional working model if MC Shimla own this concept and implement with active participation of the local community.

Objectives

The main objectives to form CDRT:

- Establish a ward-based disaster response team.
- Include local citizens in the teams.
- Maintain gender balance in the team. Encourage women participation also.
- Train and aware the City Disaster Response Team (CDRT) in emergency preparedness, basic first aid, basic firefighting, light search & rescue.
- Identify hazards at ward level.
- Procure the emergency response tools & resources and establish a ward level resource centre where these tools are kept and are easily available during emergency.
- Collect information about available Human Resource at ward level (like, doctor, police, home guard, army, firefighters etc.) and include them in team as honorary members so that their services can be utilized.
- Aware local community about the resources and critical facilities (like natural water resource, dispensary, open grounds, car parking, police station etc.) available in their ward.

Formation of Team

- Register participants through online as well as offline registration form.
- Set the role of ward councillor as focal point for registration in coordination with City Project Coordinator for Disaster Management.
- Set age limit (18-45 years) for registration.
- Minimum 10 members and maximum 20 members can be selected.
- People above 45 years can be registered as honorary members.

- Organize orientation workshop for all registered citizens.
- Finalise team and ward leader CDRT during the orientation workshop.

Role of the City Disaster Response Team (CDRT)

- Attend all the practical training programs organized by Municipal, Corporation.
- Create a WhatsApp group of all the team members where information and resources can be shared.
- Maintain the decorum of the WhatsApp group, share relevant information.
- Share local emergency event immediately so that response is activated timely.
- Identify the suitable space for resource centre.
- Maintain the inventory of the tools purchased and kept in the resource room.
- Stock taking of tools after every emergency response if tools are used in it.
- Decide the role of each team member to avoid any confusion.
- Organize monthly 2-hour hazard specific awareness workshop for the local community.
- Keep ward councillor in loop for all the activities.

Training and Capacity Building of the CDRT

Selected team members are expected to undergo professional trainings on various skills at Government Training Institutes or separate training programs organized for them by the Municipal Corporation. These training programs should be focused on:

- Understanding Disasters
- Basic First Aid
- Light Search & Rescue
- Firefighting
- Psychological First Aid
- Handling the emergency response equipment.

After successful completion of the training programs, Municipal Corporation may provide identity cards to the team members. To encourage the voluntary spirit of the team, the MC Shimla can provide stipend to the team members during training programs.

The team will further aware the local community on various hazards, funds may be allocated to arrange refreshments (if any) to the present community members. These training courses are proposed on monthly basis in accordance with the roles specified above for the CDRT.

The MC Shimla can provide opportunities to these team members for undergoing refresher courses from time to time. To make this process sustainable, new team members recruitments can be done once in two years. The existing team members should be free to choose their term after two years so that the team spirit in maintained and new members also get chance to be a part of the team.

The MC Shimla can also provide T-shirts with CDRT logo and identity cards to encourage the team members.

Hazard Identification

Shimla city is prone to various natural and human induced hazards like earthquake, landslide, heavy snowfall, forest fire, flash flood, domestic fire, stampede, tree falling etc. but all wards do not have same exposure to all types of the hazards. For example, some wards may not be exposed to forest fires and some are not exposed to the stampede. The CDRT can identify the hazards for which their ward is more exposed. This listing is important for the preparedness of the CDRT and local community. The hazard identification can also be discussed in detail with the community so that everyone is aware and participate in emergency preparedness activities.

Resources Centre

- Identify centrally located room to store emergency response tools.
- If ward office is approachable and space is available to keep the tools.
- Any community member is ready to provide one room on rent or voluntary.
- Need to build a structure in the centre of the ward, identify the space.
- Team leader of CDRT shall be responsible for inventory and key.
- Any other community member residing near to the resource centre can also take the responsibility on voluntary basis
- Keys should be available easily during any emergency.

Emergency Response Tools

The CDRT will be trained in using the emergency response tools. These tools should be procured at ward level. Following points are important for the process.

- Emergency response related equipment
- Procurement of tools (ward wise)
- Record keeping (inventory) of items
- User manuals
- In-out record keeping (team leader)

Financial Resources

Municipal corporation need to arrange funds to implement this concept. Himachal Pradesh State Disaster Management Authority (HPSDMA) and Shimla District Disaster Management Authority (DDMA) can be approached by the MC to support this concept in the capital city of the state.

Identification of locally available resources

The MC Shimla has implemented the project 'micro mapping of critical facilities and resources' in January-February 2021 in the city. These critical facilities and resources are like natural water source, fire hydrants, health centres, open spaces, community halls, schools, ward offices etc. These resources are crucial during any emergency. Awareness generation at ward about these resources will be useful in emergency response. Ward-level maps containing this information can be printed and placed in the ward office, resource centre or training hall identified for the community awareness workshops. Identification of ward-based NGOs and volunteers can also be helpful in local emergency response.

9 Important Terminology related to Fire Hazard

9.1 Glossary of Terms related to Building Fire (NBC, 2016)

1. Assisted Evacuation:

Strategy that exists during which a designated person or persons provide assistance, during an emergency, to another person(s) to leave a building or a specific part of the built environment and to reach a final place of safety.

2. Atrium:

A large-volume space created by a floor opening or series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; lifts hoist-way; an escalator opening; or as a utility shaft used for plumbing, electrical, air conditioning, or communications facilities.

3. Authorities Concerned:

An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving or accepting equipment, materials, an installation, or a procedure.

4. Automatic Fire Detection and Alarm System:

A system comprising components and sub-systems required for automatically detecting smoke, heat or fire initiating an alarm and other actions as appropriate. This system also includes manually operated electronic fire alarm (MOEFA) system.

5. Building:

Any structure for whatsoever purpose and of whatsoever materials constructed and every part thereof whether used as human habitation or not and includes foundation, plinth, walls, floors, roofs, chimneys, plumbing and building services, fixed platforms, Veranda, balcony, cornice or projection, part of a building or anything affixed thereto or any wall enclosing or intended to enclose any land or space and signs and outdoor display structures. Tents, Shamianahs, tarpaulin shelters, etc, erected for temporary and ceremonial occasions with the permission of the Authority shall not be considered as building.

6. Building, Height of:

The vertical distance measured in the case of flat roofs, from the average level of the ground around and contiguous to the building or as decided by the Authority to the terrace of the last livable floor of the building adjacent to the external wall; and in the case of pitched roofs, up to the point where the external surface of the outer wall intersects the finished surface of the sloping roof; and in the case of gables facing the road, the mid-point between the eaves level and the ridge. Where the building is located in a sloped terrain, height shall be determined from the lowest level (that is approachable by the fire service vehicles) to the terrace level. Architectural features serving no other function except that of decoration shall be excluded for the purpose of measuring heights.

7. Combustible Material:

A material which either burns itself or adds heat to a fire, when tested for non combustibility in accordance with accepted standard.

8. Common Path of Travel:

That portion of the exit access which the occupants are required to traverse before two (or more) separate and distinct routes or

two (or more) exits become available. Common paths of travel are part of travel distance.

9. Covered Area:

Ground area covered by the building immediately above the plinth level. The area covered by the following in the open spaces is excluded from covered area.

(a) Garden, rockery, well and well structures, plant nursery, water pool, swimming pool (if uncovered), platform round a tree, tank, fountain, bench, Chabutara with open top and unenclosed on sides by walls and the like;

(b) Drainage culvert, conduit, catch-pit, gully pit, chamber, gutter and the like;

(c) Compound wall, gate, unstoreyed porch and portico, slide, swing, uncovered staircases, ramp areas covered by Chhajja and the like; and

(d) Watchman's booth, pump house, garbage shaft, electric cabin or substations, and such other utility structures meant for the services of the building under consideration.

10. Down-Comer:

An arrangement of firefighting within the building by means of down-comer pipe connected to terrace tank through terrace pump, gate valve and non-return valve and having mains not less than 100 mm internal diameter with landing valves on each floor/landing. It is also fitted with inlet connections at ground level for charging with water by pumping from fire service appliances and air release valve at roof level to release trapped air inside.

11. Dry Riser:

An arrangement of firefighting within the building by means of vertical rising mains not less than 100 mm internal diameter with landing valves on each floor/landing which is normally dry but is capable of being charged with water usually by pumping from fire service appliances.

12. Emergency Lighting:

Lighting provided for use when the supply to the normal lighting fails.

13. Emergency Lighting System:

A complete but discrete emergency lighting installation also fed from the standby power source to the emergency lighting lamp(s), for example, self-contained emergency luminaire or a circuit from central battery (with or without monitoring system) connected through wiring to several escape lighting luminaries.

14. Escape Lighting:

That part of the emergency lighting which is provided to ensure that the escape route is illuminated at all material times, for example, at all times when persons are on the premises, or at times the main lighting is not available, either for the whole building or for the means of egress.

15. Evacuation Lift:

Lift that can be used, during an emergency, for self-evacuation.

16. Exit:

That unobstructed component of means of egress which is between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways, exit passageways, exterior exit stairways and exterior exit ramps

17. Exit Access:

That portion of a means of egress that leads to an exit (for example, doorways, staircase lobby, ramps, veranda, corridor or passageway leading to an exit)

18. Exit Access Corridor:

A corridor in exit access which may not necessarily have the requirement of exits being met.

19. Exit Discharge:

The component of a means of egress between the termination of an exit and a public way

20. Fire Barrier (or Fire Resisting Barrier):

A fire barrier is a vertically or horizontally aligned member such as a wall or a fire curtain, or a floor. These may be with discontinuities created by openings with a specified fire resistance rating, where such members are designed and constructed with a specified fire resistance rating to limit the spread of fire that also restricts the movement of smoke.

21. Fire Compartment:

A space within a building that is enclosed by fire barrier or fire resistant walls on all sides, including the top and bottom.

22. Fire Door and Fire Door Assembly:

Any combination of fire door, frame, hardware and other accessories that together provide a specific fire resistant rating to the opening in terms of its stability, integrity and insulation properties, when installed in the openings in fire separation walls. Fire door is a component of fire door assembly.

23. Fire Exit:

A way out leading from exit access with or without panic bar provided on the door.

24. Firefighting Shaft (Fire Tower):

An enclosed shaft having protected area of 120 min fire resistance rating comprising protected lobby, staircase and fireman's lift, connected directly to exit discharge or through exit passageway with 120 min fire resistant wall at the level of exit discharge to exit discharge. These shall also serve the purpose of exit requirement/ strategy for the occupants. The respective floors shall be approachable from fire-fighting shaft enabling the fire fighters to access the floor and also enabling the fire fighters to assist in evacuation through fireman's lift. The firefighting shaft shall be equipped with 120 min fire doors. The firefighting shaft shall be equipped with firemen talk back, wet riser and landing valve in its lobby, to fight fire by fire fighters.

25. Fire Load:

Calorific energy, of the whole contents contained in a space, including the facings of the walls, partitions, floors and ceilings.

26. Fire Load Density:

Fire load divided by floor area.

27. Fireman's Lift:

A lift or a group of lifts invariably associated with all the features and requirements of a fire-fighting shaft. Such lift(s) are installed to enable fire services personnel to reach different floors with minimum delay, and shall meet the additional features as required in accordance with this Part. This lift also serves the purpose of meeting the requirement of evacuation lift for assisted evacuation.

28. Fire Resistance:

Fire resistance is a property of an element of building construction and is the measure of its ability to satisfy for a stated period, some or all of the following criteria:

(a) Load bearing capacity (Stability) (R) - The ability of a load bearing element to withstand fire exposure without any loss of structural stability.

(b) Integrity (E) - Resistance to penetration of flame and hot gases.

(c) Insulation (I) - Resistance to temperature rise on the unexposed face up to a maximum of 180°C at any single point and average temperature of 140°C.

29. Fire Resistance Rating:

The time that a material or construction will withstand the standard fire exposure as

determined by fire test done in accordance with the standard methods of fire tests of materials/ structures as per the accepted standard.

30. Fire Resistant Wall:

Fire resistance rated wall, having opening(s) with specified fire resistant rating, which restricts the spread of fire from one part of a building to another part of the same building.

31. Fire Separation:

The distance in meter, measured from the external wall of the building concerned to the external wall of any other building on the site, or from other site, or from the opposite side of street or other public space for the purpose of preventing the spread of fire.

32. Fire Stop:

A fire resistant material, or construction, having a fire resistance rating of not less than the fire separating elements, installed in concealed spaces or between structural elements of a building to prevent the spread/propagation of fire and smoke through walls, ceilings and the like as per the laid down criteria.

33. Fire Suppression Systems:

(a) Gas based systems - Systems that use gaseous agents as fire suppression media, such as, all agents alternate to Halon gases, listed and approved for use by relevant Indian Standards; other methods/types of gas based systems where their protection is equal to or better than what is suggested above for the type of application subject to the acceptance of Authorities concerned may also fall under such systems.

(b) Water based systems - Systems that use mainly water as firefighting media such as hydrant system, sprinkler system, water spray system, foam system and water mist system.

34. Fire Wall or Fire Separating Wall:

A fire resistance rated wall having fire protected openings, which restricts the spread of fire and extends continuously from the foundation to the roof (and through the roof at least 1m above the roof in case of combustible roof), with sufficient structural stability under fire conditions to allow collapse of construction on one side or either side without collapse of the wall.

35. Floor Area (Gross):

The area of the floor within the inside perimeter of the outside walls of the floor of the building under consideration with no deductions for corridors and passage-ways, stairs, closets, thickness of interior walls, columns, lifts and building shafts or other features.

36. Floor Area Ratio (FAR):

The quotient obtained by dividing the total covered area (plinth area) on all floors by the area of the plot:

37. Fire Exit Hardware:

A door-latching assembly incorporating an actuating member or panic bar that releases the latch bolt upon the application of a force in the direction of egress travel, provided on exits.

38. High Rise Building:

A building 15m or above in height (irrespective of its occupancy).

39. Horizontal Exit:

A defend in place or a staging arrangement, providing safety from fire and smoke originating from the area of incidence, by allowing alternative egress from a compartment to an area of refuge or another compartment at or near the same level. This also includes such egress from a compartment to an adjoining building. A horizontal exit shall be through a fire door of 120 min rating in a fire resistant wall. Horizontal exit require separation with the refuge area or adjoining compartment through 120 min fire barrier. The adjoining compartment of the horizontal exit should allow unlocked and ease of egress and exits

for the occupants using defend in place strategy.

40. Lift Lobby:

A space from which people directly enter a lift car(s) and into which people directly enter upon exiting a lift car(s).

41. Means of Egress:

A continuous way of travel from any point in a building or structure to a public way, consisting of three separate and distinct parts, that is, exit access, exit and exit discharge.

42. Means of Escape:

A way out of a building or structure that does not conform to the strict definition of 'means of egress' but does provide an alternate way out.

43. Metro Station:

(1) Concourse - Intermediate level(s) or area(s) connecting a station platform(s) to a public way through stairs, escalators or corridors.

(2) Crush Train Load -The number of passengers inside a train when it is filled to maximum capacity permissible by rolling stock design.

(3) Entraining Load -The number of passengers boarding a train at a platform.

(4) Headway -The interval of time between the arrivals of consecutive trains at a platform in a station.

(5) Mass Rapid Transit - Any station building or part thereof, permanent or temporary, through which people transit for the duration of time required to enter the building and board the train to depart the station platform or to alight from the train and depart from the station building.

(6) Non-transit Occupancy - Occupancy not under the control of the system operating authority.

(7) Point of Safety - One of the following:

(a) An enclosed exit that leads to a public, way or safe location outside the station, trainway, or vehicle,

(b) An at- grade point beyond the vehicle, enclosing stations, or trainway,

(c) A point on open track beyond the open or enclosed station or enclosed train-way, and

(d) Any other location approved by the Authorities concerned.

(8) Station - A place designated for the purpose of loading and unloading passengers, including service area and ancillary spaces associated with the same structure.

(a) Composite station - A transit station that is constructed contiguous with non-transit occupancy.

(b) Enclosed station-A station or portion thereof that does not meet the definition of an open station.

(c) Open station-A station that is constructed such that it is directly open to the atmosphere, and smoke and heat are allowed to disperse directly into surrounding open atmosphere.

(d) Station Platform - The area of a station immediately adjacent to a guide way, used primarily for loading and unloading passengers.

44. Mixed Occupancy:

A multiple occupancy where the occupancies are intermingled.

45. Multiple Occupancy:

A building or structure in which two or more classes of occupancy exist.

46. Occupancy or Use Group:

The principal occupancy for which a building or a part of a building is used or intended to be used; for the purpose of classification of a building according to the occupancy, an occupancy shall be deemed to include subsidiary occupancies which are contingent upon it.

47. Occupant Load:

Maximum number of persons that might occupy a building or portion thereof at any one time.

48. Place of Comparative Safety:

Places within a building where people can stay little longer until evacuation, for example, refuge areas, terrace, fire/smoke separated compartments, etc.

49. Pressurization:

The establishment of a pressure difference across a barrier to protect exit, stairway, lobby, exit passageway or room of a building from smoke penetration.

50. Pressurization Level:

The pressure difference between the pressurized space and the adjoining area served by the pressurized space expressed in Pascal

51. Public Way:

A street, alley, or other similar parcel of land essentially open to the outside air, dedicated, or otherwise permanently appropriated to the public for public use and having a clear width and height of not less than 3 m.

52. Ramp:

The construction, in the form of an inclined plane that is steeper than or equal to 1 : 20 (5 percent) from the horizontal, together with any intermediate landing, that makes it possible to pass from one level to another.

53. Refuge Area:

An area within the building for a temporary use during egress. It generally serves as a staging area which is protected from the effect of fire and smoke.

54. Roof Exits:

A means of escape on to the roof of a building, where the roof has access to it from the ground through alternative stair case or adjacent building.

55. Site (Plot):

A parcel (piece) of land enclosed by definite boundaries.

56. Smoke Barrier:

A continuous membrane, or a membrane, where such membrane is designed and constructed to restrict the movement of smoke.

57. Smoke Compartment:

A space within a building enclosed by smoke barriers on all sides.

58. Stack Pressure:

Pressure difference caused by a temperature difference creating an air movement within a duct, chimney or enclosure

59. Travel Distance:

The distance to be travelled from any point in a building to a protected exit or external escape route or final exit measured along the line of travel.

60. Ventilation:

Supply of outside air into, or the removal of inside air from an enclosed space.

61. Venting Fire :

The process of facilitating heat and smoke to leave a building as quickly as possible by such paths so that lateral spread of fire and heat is checked, firefighting operations are facilitated and minimum fire damage is caused.

62. Visual Strobes/Flashing:

It is an audio-visual fire alarm for alerting persons with hearing impairment with flashing light. The strobe frequency should be from 0.5 Hz to 4.0 Hz.

63. Volume to Plot Area Ratio (VPR):

The ratio of volume of building measured in cubic metre to the area of the plot measured in square metre and expressed in metre.

64. Water Based Systems:

(1) Hydrant System - A distribution system having a network of piping installed underground/above- ground around and/or through inside of a building with internal and/or external hydrants fitted with landing valves at regular intervals according to the occupancy. The distribution system is connected to water supply system for firefighting.

(2) Automatic Sprinkler System -A system of water pipes fitted with sprinkler heads at suitable intervals and heights and designed to actuate automatically, control and extinguish a fire by the discharge of water.

(3) Automatic Water Spray Systems -A special fixed pipe system connected to a reliable source of fire protection water supply and equipped with water spray nozzles for specific water discharge and distribution over the surface or area to be protected. The piping system is connected to the water supply through an automatically actuated deluge valve which initiates flow of water. Automatic actuation is achieved by operation of automatic detecting equipment installed along with water spray nozzles. There are two types of systems namely high velocity and medium velocity systems.

(4) Water Mist Systems - A distribution system connected to a pumping and water supply system that is equipped with nozzles capable of delivering water mist to the part/entire enclosure or area, intended to control, suppress, or extinguish fire and is capable of meeting the specified performance requirements.

(5) Foam Protection System - Firefighting systems where foam is made by mechanically mixing air with a solution consisting of fresh water to which a foaming agent (liquid concentrate) has been added. Firefighting foam is a stable aggregation of small bubbles of density lower than oil or water, and shows tenacious qualities for covering horizontal surfaces. There are three types of foam applications that is, low, medium and high expansion foams depending upon the application.

65. Wet Riser:

An arrangement for firefighting within the building by means of vertical rising mains not less than 100 mm nominal diameter with landing valves on each floor/landing for firefighting purposes and permanently charged with water from a pressurized supply.

8.2 Classification of Buildings Based on Occupancy

1. General Classification:

All buildings, whether existing or hereafter erected shall be classified according to use or the character of occupancy in one of the following

Group A	**Residential**
Group B	**Educational**
Group C	**Institutional**
Group D	**Assembly**
Group E	**Business**
Group F	**Mercantile**
Group G	**Industrial**
Group H	**Storage**
Group J	**Hazardous**

(a) Minor occupancy- This is purely incidental to operations in a main occupancy, which shall be considered as part of the main occupancy and shall be classified under the relevant group for the main occupancy.

(b) Mixed occupancy-Where two or more types of occupancies intermingle in the same building, the entire building shall be treated as mixed occupancy and the same shall comply with 3.1.12.

2. Group A - Residential Buildings:

These shall include any building in which sleeping accommodation is provided for normal residential purposes with or without cooking or dining or both facilities, except any building classified under Group C.
Buildings and structures under Group A shall be further subdivided as follows:

Subdivision A-1 Lodging and rooming houses

Subdivision A-2 One or two family private dwellings

Subdivision A-3 Dormitories

Subdivision A-4 Apartment house

Subdivision A-5 Hotels

Subdivision A-6 Starred hotels

(a) Subdivision A-1 Lodging and rooming houses - These shall include any building or group of buildings under the same management, in which separate sleeping accommodation on transient or permanent basis, with or without dining facilities but without cooking facilities for individuals is provided. This includes inns, clubs, motels and guest houses.

(b) Subdivision A-2 One or two family private dwellings-These shall include any private dwelling, which is occupied by members of one or two families and has a total sleeping accommodation for not more than 20 persons.
If rooms in a private dwelling are rented to outsiders, these shall be for accommodating not more than three persons per room.
If sleeping accommodation for more than 20 persons is provided in any one residential building, it shall be classified as a building in Subdivision A-1 or Subdivision A-4 as the case may be.

(c) Subdivision A-3 Dormitories - These shall include any building in which group sleeping accommodation is provided, with or without dining facilities for persons who are not members of the same family, in one room or a series of closely associated rooms under joint occupancy and single management, for example, school and college dormitories, students, and other hostels and military barracks.

(d) Subdivision A-4 Apartment houses - These shall include any building or structure in which living quarters are provided for three or more families, living independently of each other and with independent cooking facilities, for example, apartment houses, mansions and Chawls.

(e) Subdivision A-5 Hotels - These shall include any building or group of buildings under single management, in which sleeping accommodation is provided, with or without dining facilities for hotels

classified up to Four Star Category.

(f) Subdivision A-6 Starred hotels- These shall include the hotels duly approved by the concerned authorities as Five Star and above hotels.

3. Group B - Educational Buildings:

These shall include any building used for school, college, other training institutions involving assembly for instruction, education or recreation for not less than 20 students.
Buildings and structures under Group B shall be further subdivided as follows:

Subdivision B-1 Schools up to senior secondary level

Subdivision B-2 All others/ training institutions

(a) Subdivision B-1 Schools up to senior secondary level - This subdivision shall include any building or a group of buildings under single management which is used for students not less than 20 in number.

(b) Subdivision B-2 All others/ training institutions-This subdivision shall include any building or a group of buildings under single management which is used for students not less than 100 in number.
In the case of temporary buildings/ structures which are utilized for educational purposes, the provisions of 3.2.5.3 shall apply.
If residential accommodation is provided in the schools/ institutions that portion of occupancy shall be classified as a building in Subdivision A-3.

4. Group C - Institutional Buildings:

These shall include any building or part thereof, which is used for purposes, such as medical or other treatment care of persons suffering from physical or mental illness, disease or infirmity; care of infants, convalescents or aged persons and for penal or correctional detention in which the liberty of the inmates is restricted. Institutional buildings ordinarily provide sleeping accommodation for the occupants.

Buildings and structures under Group C shall be further subdivided as follows:

Subdivision C-1 Hospitals and sanatoria

Subdivision C-2 Custodial institutions

Subdivision C-3 Penal and mental institutions

(a) Subdivision C-1 Hospitals and sanatoria - This subdivision shall include any building or a group of buildings under single management, which is used for housing persons suffering from physical limitations because of health or age and those incapable of self-preservation, for example, hospitals, infirmaries, sanatoria and nursing homes.

(b) Subdivision C-2 Custodial institutions- This subdivision shall include any building or a group of buildings under single management, which is used for the custody and care of persons, such as children, convalescents and the aged who are incapable of self-preservation, for example, homes for the aged and infirm, convalescent homes and orphanages.

(c) Subdivision C-3 Penal and mental institutions - This subdivision shall include any building or a group of buildings under single management, which is used for housing persons under restraint, or who are detained for penal or corrective purposes, in which the liberty of the inmates is restricted, for example, jails, prisons, mental hospitals, mental sanatoria and reformatories.

5. Group D - Assembly Buildings:

These shall include any building or part of a building, where not less than 50 persons congregate or gather for amusement, recreation, social, religious, patriotic, civil, travel and similar purposes, for example, theatres; motion picture houses; assembly halls; auditoria; exhibition halls; museums; skating rinks; gymnasiums; restaurants; places of worship; dance halls; club rooms; passenger stations and terminals of air, surface and marine public transportation services; and stadia.

Buildings under Group D shall be further subdivided as follows:

Subdivision D-1 Buildings having a theatrical or motion picture or any other stage and fixed seats for over1 000 persons

Subdivision D-2 Buildings having a theatrical or motion picture or any other stage and fixed seats up to 1 000 persons

Subdivision D-3 Buildings without a permanent stage having accommodation for 300 or more persons but no permanent seating arrangement

Subdivision D-4 Buildings without a permanent stage having accommodation for less than 300 persons with no permanent seating arrangement

Subdivision D-5 All other structures including temporary structures designed for assembly of people not covered by Subdivisions D-1 to D-4, at ground level

Subdivision D-6 Buildings having mixed occupancies of assembly and mercantile (for example, shopping malls providing facilities such as shopping, cinema theatres, multiplexes and restaurants/food courts)

Subdivision D-7 Underground and elevated mass rapid transit system.

(a) Subdivision D-1-This subdivision shall include any building primarily meant for theatrical or operatic performances and which has a stage, proscenium curtain, fixed or portable scenery or scenery loft, lights, mechanical appliances or other theatrical accessories and equipment for example, theatres, motion picture houses, auditoria, concert halls, television and radio studios admitting an audience and which are provided with fixed seats for over 1000 persons.

(b) Subdivision D-2- This subdivision shall include any building primarily meant for use as described for Subdivision D-1, but with fixed seats up to 1 000 persons.

(c) Subdivision D-3 -This subdivision shall include any building, its lobbies, rooms and other spaces connected thereto, primarily intended for assembly of people, but which has no theatrical stage or permanent theatrical and/or cinematographic accessories and has accommodation for 300 persons or more, for example, dance halls, night clubs, halls for incidental picture shows, dramatic, theatrical or educational presentation, lectures or other similar purposes having no theatrical stage except a raised platform and used without permanent seating arrangement; art galleries, community halls, marriage halls, places of worship, museums, lecture halls, passenger terminals and heritage and archaeological monuments, pool and billiard parlours, bowling alleys, community halls, courtrooms, gymnasiums (without spectator seating), indoor swimming pools (without spectator seating), indoor tennis courts (without spectator seating).

(d) Subdivision D-4 - This subdivision shall include any building primarily intended for use as described in Subdivision D-3, but with accommodation for less than 300 persons with no permanent seating arrangements.

(e) Subdivision D-5 -This subdivision shall include any building or structure, permanent or temporary meant for

or temporary meant for assembly of people not covered by Subdivisions D-1 to D-4, for example, grandstands, stadia, amusement park structures, reviewing stands and circus tents, arenas, external swimming pools, tennis and similar type of courts.

(f) Subdivision D-6 - This subdivision shall include any building for assembly of people provided with multiple services/facilities like shopping, cinema theatres, multiplexes, restaurants/food court.

(g) Subdivision D-7 - This subdivision shall include any building or structure like example, underground or elevated railways.

6. Group E - Business Buildings

These shall include any building or part thereof which is used for transaction of business for keeping of accounts and records and similar purposes, professional establishments, service facilities, etc. City halls, town halls, courthouses and libraries shall be classified in this group so far as the principal function of these is transaction of public business and keeping of books and records Buildings under Group E shall be further subdivided as follows:

Subdivision E-1 Offices, bank, professional establishments, like offices of architects, engineers, doctors, lawyers, post offices and police stations

Subdivision E-2 Laboratories, outpatient clinics, research establishments, libraries and test houses

Subdivision E-3 Electronic data processing centres, computer installations, information technology parks and call centres

Subdivision E-4 Telephone exchanges

Subdivision E-5 Broadcasting stations,

7. Group F - Mercantile Buildings:

These shall include any building or part thereof, which is used as shops, stores, market, for display and sale of merchandise, either wholesale or retail.
Mercantile buildings shall be further subdivided as follows:

Subdivision F-1 Shops, store, departmental store, markets (any with covered area up to 500 m2)

Subdivision F-2 Shops, stores, departmental stores, markets (any with covered area more than 500 m2)

Subdivision F-3 Underground shopping centres

Storage and service facilities incidental to the sale of merchandise and located in the same building shall also be included under this group.

8. Group G - Industrial Buildings

These shall include any building or part of a building or structure, in which products or materials of all kinds and properties are fabricated, assembled, manufactured or processed, for example, assembly plants, industrial laboratories, dry cleaning plants, power plants, generating units, pumping stations, fumigation chambers, laundries, buildings or structures in gas plants, refineries, dairies and saw-mills, etc.
Buildings under Group G shall be further subdivided as follows:

Subdivision G-1 Buildings used for low hazard industries

Subdivision G-2 Buildings used for moderate hazard industries

Subdivision G-3 Buildings used for high hazard industries

The hazard of occupancy, for the purpose of the Code, shall be the relative danger of the start and spread of fire, the danger of smoke or gases generated, the danger of explosion

or other occurrences potentially endangering the lives and safety of the occupants of the buildings.

Hazard of occupancy shall be determined by the Authority on the basis of the fire loads of the contents, and the processes or operations conducted in the building, provided, however, that where the combustibility of the material, the flame spread rating of the interior finish or other features of the building or structure are such as to involve a hazard greater than the occupancy hazard, the greater degree of hazard shall govern the classification.

Where different degrees of hazard of occupancy exist in different parts of a building, the most hazardous of those shall govern the classification for the purpose of this Code, except in cases where hazardous areas are segregated or protected as specified in the Code.

(a) Subdivision G-1-This subdivision shall include any building in which the contents are of such comparative low combustibility and the industrial processes or operations conducted therein are of such a nature that there is hardly any possibility for any self- propagating fire to occur and the only consequent danger to life and property may arise from panic, fumes or smoke, or fire from some external source.

(b) Subdivision G-2-This subdivision shall include any building in which the contents or industrial processes or operations conducted therein are liable to give rise to a fire which will burn with moderate rapidity or result in other hazardous situation and may give off a considerable volume of smoke, but from which neither toxic fumes nor explosions are to be feared in the event of fire.

(c) Subdivision G-3- This subdivision shall include any building in which the contents or industrial processes or operations conducted therein are liable to give rise to a fire which will burn with extreme rapidity or result in other hazardous situation or from which poisonous fumes or explosions are to be feared in the event of a fire.

9. Group H - Storage Buildings:

These shall include any building or part of a building used primarily for the storage or sheltering (including servicing, processing or repairs incidental to storage) of goods, ware or merchandise (except those that involve highly combustible or explosive products or materials), vehicles or animals, for example, warehouses, cold storages, freight depots, transit sheds, storehouses, truck and marine terminals, garages, hangars, grain elevators, barns and stables. Storage properties are characterized by the presence of relatively small number of persons in proportion to the area. Any new use which increases the number of occupants to a figure comparable with other classes of occupancy shall change the classification of the building to that of the new use, for example, hangars used for assembly purposes, warehouses used for office purposes, garage buildings used for manufacturing.

10. Group J - Hazardous Buildings:

These shall include any building or part thereof which is used for the storage, handling, manufacture or processing of highly combustible or explosive materials or products which are liable to burn with extreme rapidity and/or which may produce poisonous fumes or explosions for storage, handling, manufacturing or processing which involve highly corrosive, toxic or noxious alkalis, acids or other liquids or chemicals producing flame, fumes and explosive, poisonous, irritant or corrosive gases; and for the storage, handling or processing of any material producing explosive mixtures of dust which result in the division of matter into fine particles subject to spontaneous ignition. Examples of buildings in this class are those buildings which are used for,

(a) Storage, under pressure of more than 0.1 N/mm2 and in quantities exceeding 70 m^3 of acetylene, hydrogen, illuminating and natural gases, ammonia, chlorine, phosgene, sulphur dioxide, carbon dioxide, methyloxide and all gases subject to explosion, fume or toxic hazard, cryogenic gases, etc;

(b) Storage and handling of hazardous and highly flammable liquids, liquefiable gases like LPG, rocket propellants, etc;

(c) storage and handling of hazardous and highly flammable or explosive materials (other than liquids); and

(d) Manufacture of artificial flowers, synthetic leather, ammunition, explosives and fireworks.

11. Mixed Occupancy:

In case of mixed occupancy, in so far as fire protection is concerned, all the occupancies/the entire building shall be governed by the most restrictive provisions of the Code among those applicable for individual occupancies. The provisions for life safety given in the Code for individual occupancy shall, however, apply to the respective occupancies. Exits in such mixed occupancy shall be arranged so as to ensure that means of egress is not decreased in the direction of egress travel.

Further, in such mixed occupancies, the occupancies are also required to be separated (horizontally and/or vertically as the case may be) by a 240 min fire resistance rating.

12. Where change in the occupancy of any building places it in a different group or in a Where change in the occupancy of any building places it in a different group or in a different subdivision of the same group, such building shall be made to comply with the requirements of the Code for the new group or its subdivision.

13. Where the new occupancy of a building is less hazardous, based on life and fire risk, than its existing occupancy, it shall not be necessary to conform to the requirements of the Code for the new group or its subdivision.

14. A certificate of occupancy shall be necessary, as required under Part 2 'Administration' of the Code, before any change is effected in the character of occupancy of any building.

8.3 Glossary of Terms related to Forest Fire (Forest Department, GoHP)

1. Aerial Fuel:

The standing and supported live and dead fuels not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, bark, lianas and other vines, moss and high brush. In general they easily dry out and may carry surface fires into the canopy.

2. Agrosilvopastoral system:

Land-use system in which woody perennials are used on the same land as agricultural crops and animals, in some form of spatial arrangement or temporal sequence. In fire management agrosilvopastoral systems are planned as fuelbreaks (particularly shaded fuelbreaks) to reduce fire risk by modifying understory vegetation and soil cover (cf.fuelbreak).

3. Backfire:

A fire spreading, or set to spread, into or against the wind:

(1) As used in fire suppression - A fire set along the inner edge of a control line to consume the fuel in the path of a forest fire and/or change the direction of force of the fire's convection column (Note: doing this on a small scale and with closer control, in order to consume patches of unburned fuel and aid control-line construction (as in mopping-up) is distinguished as "burning out, firing out, clean burning");

(2) As used in prescribed burning - Designation of fire movement in relation to wind.

4. Backfiring:

A form of indirect attack where extensive fire is set along the inner edge of a control line or natural barrier, usually some distance from the wildfire and taking advantage of indrafts, to consume fuels in the path of the fire, and thereby halt or retard the progress of the fire front.

5. Biomass:

(1) The amount of living matter in a given habitat, expressed either as the weight of organisms per unit area or as the volume of organisms per unit volume of habitat.

(2) Organic matter that can be converted to fuel and is therefore regarded as a potential energy source. Note: Organisms include plant biomass (phytomass) and animal biomass (zoomass).

(3) In fire science the term biomass is often used synonymously with the term "fuel" and includes both living and dead phytomass (necromass); the zoomass is usually excluded.

6. Buffer strip / Buffer zone:

A fuel break on the form of a strip of land along or adjacent to roads, trails, watercourses and recreation sites, or between (separating) fuel complexes (cf. fuelbreak).

7. Candle Bark:

Long streamers of bark decorticated from some gum-barked Eucalyptus species forming a firebrand responsible for long-distance spotting.

8. Combustion:

Consumption of fuels by oxidation, evolving heat and generally flame (neither necessarily sensible) and/or incandescence. Combustion can be divided into four phases: pre-ignition (or preheating), flaming, smouldering, and glowing.

9. Control Line:

Comprehensive term for all constructed or natural barriers and treated fire edges used to control a fire

10. Dead Fuel:

Fuels with no living tissue in which moisture

content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation (cf. Live Fuel).

11. Dispatcher:

A person employed to receive reports of discovery and status of fires, confirm their locations, take action promptly to provide the firefighters and equipment likely to be needed for control in first attack, send them to the proper place and provide support as needed.

12. Draped fuels:

Needles, leaves, and twigs that have fallen from tree branches and have lodged on lower branches or brush. Comprises a part of aerial fuels.

13. Drip torch:

A hand-held apparatus for igniting prescribed fires and backfires by dripping flaming fuel on the materials to be burned. The device consists of a fuel fount, burner arm, and ignition source. Fuel used is generally a mixture of 65-80% diesel and 20-35% gasoline.

14. Early burning:

Prescribed burning early in the dry season, before the leaves and undergrowth are completely dry or before the leaves are shed; carried out as a precaution against more severe fire damage later in the fire season.

15. Escaped fire:

Fire which has exceeded or is expected to exceed initial attack capabilities or planned prescription.

16. Fine fuel:

Fast-drying dead fuels, generally characterized by a comparatively high surface area-to-volume ratio, which are less than 0.5 cm in diameter and have a timelag of one hour or less. These fuels (grass, leaves, needles, etc.) ignite readily and are consumed rapidly by fire when dry. (cf. flash fuel, medium fuel, heavy fuel).

17. Fire Behaviour:

The manner in which fuel ignites, flame develops, and fire spreads and exhibits other related phenomena as determined by the interaction of fuels, weather, and topography. Some common terms used to describe fire behaviour include the following:

(1) **Smouldering** - A fire burning without flame and barely spreading.

(2) **Creeping** - A fire spreading slowly over the ground, generally with a low flame.

(3) **Running** - A fire rapidly spreading and with a well-defined head.

(4) **Torching** - Ignition and flare up of foliage of a single tree or a small clump of trees, usually from bottom to top (syn. candling).

(5) **Spotting -** A fire producing firebrands carried by the surface wind, a fire whirl, and/or convection column that fall beyond the main fire perimeter and result in spot fires.

(6) **Crowning -** A fire ascending into the crowns of trees and spreading from crown to crown.

18. Fire Belt:

A strip, cleared or planted with trees, maintained as a firebreak or fuelbreak.

19. Firebreak:

Any natural or constructed discontinuity in a fuelbed utilized to segregate, stop, and control the spread of fire or to provide a control line from which to suppress a fire; characterized by complete lack of combustibles down to mineral soil (as distinguished from fuelbreak).

20. Fire Climax:

A plant community at a stage of succession

maintained by periodic fires.

21. Fire Control:

All activities concerned with protection of vegetation from fire

22. Fire Cycle:

The number of years required to burn over an area equal to the entire area of interest

23. Fire Danger:

A general term used to express an assessment of both fixed and variable factors of the fire environment that determine the ease of ignition, rate of spread, difficulty of control, and fire impact; often expressed as an index.

24. Fire Danger Rating:

A component of a fire management system that integrates the effects of selected fire danger factors into one or more qualitative or numerical indices of current protection needs.

25. Fire-dependent Species:

Plant and animal species which require regular fire influence which triggers or facilitates regeneration mechanisms, or regulates competition. Without the influence of fire these species would become extinct.

26. Fire Ecology:

The study of the relationships and interactions between fire, living organisms, and the environment.

27. Fire Exclusion:

Planned (systematic) protection of an ecosystem from any wildfire, including any prescribed fire, by all means of fire prevention and suppression in order to obtain management objectives (cf. fire control)

28. Fire Frequency:

The average number of fires or regularly occurring fire events per unit time in a designated area.

29. Fire Hazard:

(1) A fuel complex, defined by volume, type, condition, arrangement, and location, that determines the degree both of ease of ignition and of fire suppression difficulty;

(2) A measure of that part of the fire danger contributed by the fuels available for burning. Note: Is worked out from their relative amount, type, and condition, particularly their moisture contents.

30. Fire History:

The reconstruction and interpretation of the chronological record, causes and impacts of fire occurrence in an ecosystem in relation to changes of past environmental, cultural and socio-economic conditions. Fire history evidence is based on analysis of charcoal deposits in soils, sediments, and ice, dendrochronology (fire scar analysis), historical documents, and fire reports.

31. Fire Information System:

An information system designed to support fire management decisions. Advanced fire information systems integrate different sources of information required (e.g., vegetation conditions including fire history, topography, fire weather, fire behaviour models, real-or near-real time fire detection and monitoring data, fire management resources, infrastructures and pre-suppression information) on the base of a Geographic Information System (GIS) and allows real-time distribution or access via telecommunication.

32. Fire Interval or Fire-return Interval:

The number of years between two successive fires documented in a designated area (i.e., the interval between two successive fire occurrences); the size of the area must be clearly specified.

33. Fire Management:

All activities required for the protection of burnable forest and other vegetation values from fire and the use of fire to meet land management goals and objectives. It involves the strategic integration of such factors as a knowledge of fire regimes, probable fire effects, values-at-risk, level of forest protection required, cost of fire-related activities, and prescribed fire technology into multiple-use planning, decision making, and day-to-day activities to accomplish stated resource management objectives. Successful fire management depends on effective fire prevention, detection, and pre-suppression, having an adequate fire suppression capability, and consideration of fire ecology relationships.

34. Fire Management Plan:

(1) A statement, for a specific area, of fire policy and prescribed action;

(2) The systematic, technological, and administrative management process of determining the organization, facilities, resources, and procedures required to protect people, property, and forest areas from fire and to use fire to accomplish forest management and other land use objectives (cf. fire prevention plan or fire Campaign, pre-suppression planning, pre-attack plan, fire suppression plan, end-of season appraisal).

35. Fire Pre-Suppression:

Activities undertaken in advance of fire occurrence to help ensure more effective fire suppression; includes overall planning, recruitment and training of fire personnel, procurement and maintenance of firefighting equipment and supplies, fuel treatment, and creating, maintaining, and improving a system of fuel breaks, roads, water sources, and control lines.

36. Fire Prevention:

All measures in fire management, fuel management, forest management, forest utilization and concerning the land users andthe general public, including law enforcement, that may result in the prevention of outbreak of fires or the reduction of fire severity and spread.

37. Fire Protection:

All actions taken to limit the adverse environmental, social, political, cultural and economical effects of wild land fire.

38. Fire Regime:

The patterns of fire occurrence, size, and severity - and sometimes, vegetation and fire effects as well - in a given area or ecosystem. It integrates various fire characteristics. A natural fire regime is the total pattern of fires over time that is characteristic of a natural region or ecosystem. The classification of fire regimes includes variations in ignition, fire intensity and behaviour, typical fire size, fire return intervals, and ecological effects.

39. Fire Season:

(1) Period(s) of the year during which wildland fires are likely to occur and affect resources sufficiently to warrant organized fire management activities;

(2) A legally enacted time during which burning activities are regulated by State or local authority.

40. Fire Suppression:

All activities concerned with controlling and extinguishing a fire following its detection. (Syn. Fire Control, Fire Fighting). Methods of suppression

(1) **Direct Attack** - A method whereby the fire is attacked immediately adjacent to the burning fuel.

(2) **Parallel Attack** - A method whereby a fireguard is constructed as close to the fire as heat and flame permit, and burning out the fuel between the fire and the fireguard.

(3) **Indirect Attack** - A method whereby the control line is strategically located to take advantage of favourable terrain and natural breaks in advance of the fire perimeter and the intervening strip is usually burned out or backfired.

(4) **Hot Spotting** - A method to check the spread and intensity of a fire at those points that exhibit the most rapid spread or that otherwise pose some special threat to control of the situation. This is incontrast to systematically working all parts of the fire at the same time, or progressively, in a step-by-step manner.

(5) **Cold Trailing** -A method of determining whether or not a fire is still burning, involving careful inspection and feeling with the hand, or by use of a hand-held infrared scanner, to detect any heat source.

(5) **Mop-up** - The act of extinguishing a fire after it has been brought under control.

41. Fire Weather:

Weather conditions which influence fire ignition, behaviour, and suppression. Weather parameters are dry-bulb temperature, relative humidity, wind speed and direction, precipitation, atmospheric stability, winds aloft.

42. Flammability:

Relative ease of igniting and burning of a given fuel under controlled conditions, with or without a pilot flame. Flammability of a fuel is characterised quantitatively by the ignition delay of a sample of fuel exposed to a normalised radiation source.

43. Flash Fuel:

Fuels, e.g. grass, ferns, leaves, draped (i.e., intercepted when falling) needles, tree moss, and light slash, that ignite readily and are consumed rapidly by fire when dry; generally characterized by a comparatively high surface-to-volume ratio.

44. Forest Fire:

Any wildfire or prescribed fire that is burning in a forest, variously defined for legal purposes. The FAO Forest Resource Assessment 2000 aims towards global standardization of the terminology:

(1) **Forest** - Land with tree crown cover of more than 10 percent and area of more than 0.5 hectares. The trees should be able to reach a minimum height of 5 meters at maturity.

(2) **Other Wooded Land** - Land either with a crown cover of 5-10 percent of trees able to reach a height of 5 meters at maturity; or a crown cover of more than 10 percent of trees not able to reach a height of 5 meters at maturity; or with shrub or bush cover of more than 10 percent.

(3) **Other Land** - Land with less crown cover, tree height, or shrub cover as defined under "Other wooded land". Indication is desired if recurring wildfires affect "Other land" by inhibiting regeneration to the "Forest" and "Other wooded land" categories.

45. Typology:

(1) **Ground Fire** - A fire that burns in the ground fuel layer (syn. Subsurface fire, below surface fire).

(2) **Surface Fire** - A fire that burns in the surface fuel layer, excluding the crowns of the trees, as either a head fire, flank fire, or backfire.

(3) **Crown Fire**- A fire that advances through the crown fuel layer, usually in conjunction with the surface fire. Crown fires can be classified according to the degree of dependence on the surface fire phase:

(a) Intermittent crown fire- A fire in which trees discontinuously torch, but rate of spread is controlled by the surface fire phase (syn. Passive Crown Fire).

(b) Active Crown Fire - A fire that advances

with a well-defined wall of flame extending from the ground surface to above the crown fuel layer. Probably most crown fires are of this class. Development of an active crown fire requires a substantial surface fire, and thereafter the surface and crown phasesspread as a linked unit (syn. Dependent Crown Fire).

(c) Independent Crown Fire - A fire that advances in the crown fuel layer only (syn. Running Crown Fire).

46. Forest Protection:

That section of forestry concerned with the management of biotic and non-biotic damage to forests, arising from the action of humans (particularly unauthorized use of fire, human-caused wildfires, grazing and browsing, felling), natural wildfires, pests, pathogens, and extreme climatic events (wind, frost, precipitation).

47 Fragmentation:

The process of transforming large continuous vegetation or landscape patterns into smaller patches by disturbance. Natural agents of fragmentation are fire, landslides, windthrow, insects, erosion. Human-induced fragmentations include land use (e.g., agriculture, grazing, forestry), construction of residential areas, roads and other infrastructures. Fragmentation involves change of fire regimes due to alteration and discontinuity of fuels.

48. Fuel:

All combustible organic material in forests and other vegetation types, including agricultural bio-mass such as grass, branches and wood, infrastructure in urban interface areas; which create heat during the combustion process.

49 Fuel Accumulation:

Process or result of build-up of those elements of a vegetation complex which are not subject to biological decay, reduction by fire, animal grazing and browsing, or harvest by humans; used in characterizing fuel dynamics between two fires and implications on fire behaviour.

50. Fuel Arrangement:

The horizontal and vertical distribution of all combustible materials within a particular fuel type.

51. Fuelbreak:

Generally wide (20 - 300 meters) strips of land on which either less flammable native vegetation is maintained and integrated into fire management planning, or vegetation has been permanently modified so that fires burning into them can be more readily controlled (as distinguished from firebreak). In some countries fuelbreaks are integrated elements of agro-silvopastoral systems in which the vegetative cover is intensively treated by crop cultivation or grazing. Some fuelbreaks contain narrow firebreaks which may be roads or narrower hand-constructed lines. During fires, these firebreaks can quickly be widened either with hand tools or by firing out. Fuelbreaks have the advantages of preventing erosion, offering a safe place for firefighters to work, low maintenance, and a pleasing appearance (cf. control line, agrosilvopastoral system, buffer strip/zone).

52. Fuel Consumption:

The amount of a specified fuel type or strata that is removed through the fire process, often expressed as a percentage of the pre-burn fuel weight (or fuel load). It includes available fuel plus fuel consumed after the fire front passes.

53. Fuel Loading:

The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel, usually expressed as ovendry weight.

54. Fuel Management:

Act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire, in support of land management objectives.

55. Fuel Reduction:

Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition, the potential fire intensity, and/or to lessen potential damage and resistance to control.

56. Greenbelt:

A fuelbreak maintained by the cultivation of strips of less flammable plants within a zone of high fire hazard, e.g., an irrigated, landscaped, and regularly maintained fuelbreak put to some additional use (e.g., golf course, park, playground).

57. Hazard Reduction:

Treatment of living and dead forest fuels to reduce the likelihood of a fire starting, and to lessen its damage potential and resistance to control (cf. Fuel Treatment). Activity gaining special importance in residential/wildland interface areas.

58. Incident Command System:

A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. (element of the Incident Command System [ICS]).

59. Integrated Forest Fire Management (IFFM)

Designation of fire management systems which include one or both of the following concepts of integration:

(1) Integration of prescribed natural or human-caused wildfires and/or planned application of fire in forestry and other land-use systems in accordance with the objectives of prescribed burning;

(2) Integration of the activities and the use of the capabilities of the rural populations (communities, individual land users), government agencies, NGOs, POs to meet the overall of land management, vegetation (forest) protection, and smoke management including "community-based fire management" or CBFiM. The term IFFM is common for fire management approaches in less developed regions including forest and non-forest ecosystems. Note: In case of absence of forests in the area concerned the term Integrated Fire Management (IFM) is used instead (cf. prescribed burning).

60. Ladder Fuel:

Fuels which provide vertical continuity between strata and allow fire to carry from surface fuels into the crowns of trees or shrubs (torching, crowning) and support continuation of crown fires (cf. crown fuel, ground fuel, and surface fuel).

61. Late Burning:

Prescribed burning activities towards the end of the dry season

62. Low Intensity Fire:

Fire which burns with a relatively low intensity, e.g. a prescribed surface fire as opposed to a high-intensity crown fire.

63. Pre-attack Plan:

A plan detailing predetermined fire suppression strategy and tactics to be deployed following fire occurrence in a given land management unit. A pre-attack plan contains data on fuel types and topographic conditions including fuelbreaks, access routes and travel times, water supply sources,

lakes suitable for skimmer aircraft, and existing heliports. It also includes information on existing and/or proposed locations for control lines (including the types and number of fire suppression resources that may be required and probable rates of fireguard construction, and possible constraints), base and line camps, helispots, and the priorities for construction and/or improvement of pre-suppression facilities (syn. pre-attack planning, pre-attack, cf. fire management plan, fire suppression plan, pre-suppression planning).

64. Prescribed Burning:

Controlled application of fire to vegetation in either their natural or modified state, under specified environmental conditions which

allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to attain planned resource management objectives (cf. Prescribed Fire).

65. Prescribed Fire:

A management-ignited wildland fire or a wildfire that burns within prescription, i.e. the fire is confined to a predetermined area and produces the fire behavior and fire characteristics required to attain planned fire treatment and/or resource management objectives. The act or procedure of setting a prescribed fire is called prescribed burning (cf. Prescribed Burning). A wildfire burning within prescription may result from a human-caused fire or a natural fire (cf. prescribed natural fire, integrated forest fire management, wildfire).

66. Prescribed Natural Fire:

Naturally ignited fires , such as those started by lightning, which are further used to burn under specific management prescriptions without initial fire suppression and which are managed to achieve resource benefits under close supervision (cf. prescribed fire, wildfire).

67. Prescription:

Written statement defining the objectives to be attained as well as the conditions of temperature, humidity, wind direction and speed, fuel moisture, and soil moisture, under which a fire will be allowed to burn. A prescription is generally expressed as acceptable ranges of the prescription elements, and the limit of the geographic area to be covered.

68. Rate of spread:

The speed at which a fire extends its horizontal dimensions, expressed in terms of distance per unit of time (m/min or km/h) (syn. fire spread, cf. rate of area growth, rate of perimeter growth).

69. Reclamation Burning:

Prescribed burning for restoration of ecosystem characteristics and functioning (cf. restoration).

70. Rehabilitation:

The activities necessary to repair damage or disturbance caused by wildfire or the wildfire suppression activity (cf. restoration).

71. Residence Time:

(1) The time required for the flaming zone of a fire to pass a stationary point.

(2) The time an emission component is in the air between emission and removal from the air or change into another chemical configuration.

72. Residential / Wildland Interface:

The transition zone between residential areas and wildlands or vegetated fuels (cf. Urban, Urban/Wildland Interface, Wildland, Wildland Fire, Rural Urban Interface).

73. Restoration:

Restoration of biophysical capacity of ecosystems to previous (desired) conditions.

Restoration includes rehabilitation measures after fire, or prescribed burning where certainfire effects are desired (cf. rehabilitation, reclamation burning).

74. Ring Fire:

A fire started by igniting the full perimeter of the intended burn area so that the ensuing fire fronts converge toward the centre of the burn.

75. Risk:

(1) The probability of fire initiation due to the presence and activity of a causative agent

(2) A causative agent.

76. Rural Fire Protection:

Fire protection and firefighting problems that are outside of areas covered by municipal Fire & Rescue Services and its Fire Ordinance; these areas are usually remote from public water supplies and require all terrain vehicles to reach.

77. Serotiny:

Storage of seeds in closed seed containers in the canopy of shrubs and trees. For instance, serotinous cones of Lodgepole Pine do not open until subjected to temperatures of 45 to 50°C, causing the melting of the resin bond that seals the cone scales.

78. Slash:

Debris (fuels) resulting from natural events (wind/ fire) or human activities like forest harvesting.

79. Slash Disposal:

Treatment of slash to reduce fire hazard or for other purposes (cf. Fuel Management).

80. Smoke Haze:

An aggregation (suspension) in the atmosphere of very fine, widely dispersed, solid or liquid particles generated by vegetation fires giving the air an opalescent appearance.

81. Smoke Management:

The application of knowledge of fire behaviour and meteorological processes to minimize air quality degradation during prescribed fires.

82. Spot Fire:

(1) Fire ignited outside the perimeter of the main fire by a firebrand (by flying sparks or embers transported by air currents, gravity, or fire whirls).

(2) A very small fire which jumped over the fireline, that requires little time and resources to extinguish by air currents, gravity, and/or fire whirls (cf. Long-Range Spotting).

83. Stand Replacement Fire:

Fire which kills all or most living overstory trees in a forest and initiates secondary succession or regrowth.

84. Underburning:

Prescribed burning with a low intensity fire in activity-created or natural fuels under a timber canopy.

85. Urban / Wildland Interface:

The transition zone

(1) between cities and wildland (cf. urban, wildland, wildland fire)

(2) where structures and other human development meets undeveloped wildland or vegetative fuels (syn. residential/ wildland interface, wildland/ urban interface, rural urban interface).

86. Values-at-risk:

Natural resources, developments, or other values that may be jeopardized if a fire occurs.

87. Wilderness:

(1) A wild, uncultivated, uninhabited region,vegetated and nonvegetated.

(2) Area of remarkable natural beauty and ecological diversity.

(3) Area established to conserve its primeval character and influence for public enjoyment, under uncultivated conditions, in perpetuity.

88. Wildfire:

(1) Any unplanned and uncontrolled wildland fire which regardless of ignition source may require suppression response, or other action according to agency policy.

(2) Any free burning wildland fire unaffected by fire suppression measures which meets management objectives (cf. wildland, wildland fire, prescribed natural fire, prescribed fire).

89. Wildland:

Vegetated and non-vegetated land in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities; structures, if any, are widely scattered. In fire management terminology this general term includes all burnable vegetation resources including managed forests and forest plantations (cf. residential/wildland interface, wildfire.

90. Wildland Fire:

Any fire occurring on wildland regardless of ignition sources, damages or benefits (cf. wildland, wildfire, residential/wildland interface).

Sources:

1. National Building Code of India 2016 (Volume- 1)
2. Forest Fire Disaster Management 2014 by the National Institute of Disaster Management (NIDM) 2014

Annexure- 01 (A)

Contact Details - Headquarters Level

S. #	Name	Designation	Office Phone No.	Mobile No.	Email Id
1.	Sh. Satinder Pal Singh, IPS	Director Fire Service, H.P. Shimla-171001	0177-2811453	98162-49400	hgshimlagmail.com
2.	Sh. J.C. Sharma	Chief Fire Officer H.P. Shimla-2	0177-2629945 0177-2622945	94180-28191	fire-hp@nic.in
3.	Sh. Mahesh Kumar Sharma	Fire Prevention Officer, Fire Hdqrs. Shimla-2	0177-2629945	94183-11155	fpo-firehp@gov.in
4.	Sh. Sanjeev Kumar	Station Fire Officer (Supply), Fire Hdqrs. Shimla-2	0177-2629945	94592-65288	sto-firehp@gov.in

Contact Details - Fire Training Centre, Baldeyan

S. #	Name	Designation	Office Phone No.	Mobile No.	Email Id
1.	Sh. Sukh Dev	Divisional Fire Officer, Fire Training Centre, Baldeyan	0177-2740388	94187-51660	dfo-fireftc-hp@gov.in

Annexure- 01 (B)

Contact Details - District Level

S. #	Name	Designation	Office Phone No.	Mobile No.	Email Id
1,	Sh. Suresh Kumar Chauhan HPS	Commandant Home Guard, 1st Bn. Kinnaur	01786-222311	94180-62998	hg1bn-hp@nic.in
2.	Sh. Rachpal Nepta	Commandant Home Guard, 2nd Bn. Shimla	0177-2621467	98164-71717	hg2bn-hp@nic.in
3.	Sh. Bhupinder Singh, HPS	Commandant Home Guard, 4nd Bn. Nahan	01702- 222339	94180-10870	hg4bn-hp@nic.in
4.	Sh. Bheem Singh Sen	Commandant Home Guard, 5th Bn. Bilaspur	01978-224654	98172-68960	hg5bn-hp@nic.in
5.	Sh. Virender Singh Thakur, HPS	Commandant Home Guard, 6th Bn. Mandi	01905-235905	78071-58148	hg6bn-hp@nic.in
6.	Sh. Sanjiv Lakkhanpal, HPS	Commandant Home Guard, 7th Bn. Kullu	01902-222512	94180-73856	hg7bn-hp@nic.in
7.	Sh. Arvind Chaudhary, HPS	Commandant Home Guard, 8th Bn. Chamba	01899-222280	94181-38110	hg8bn-hp@nic.in
8.	Major (Retd) Vikas Saklani	Commandant Home Guard, 9th Bn. Dharamshala	01892- 223234	70181-21114	hg9bn-hp@nic.in
9.	Sh. Shushil Kumar Kaundal	Commandant Home Guard, 10th Bn. Hamirpur	01972-292302	88944-45845	hg10bn-hp@nic.in
10.	Dr. Shiv Kumar Sharma, HPS	Commandant Home Guard, 11th Bn. Solan	01792-223845	94182-75222	hg11bn-hp@nic.in
11.	Major (Retd) Vikas Saklani	Commandant Home Guard, 12th Bn. Una	01975-223345	70181-21114	hg12bn-hp@nic.in
12.	Sh. Dharam Chand Sharma	Divisional Fire Officer, Fire Division Shimla-2	0177-2625087	94186-26041	div-fire-shi-hp@gov.in

Annexure- 01 (C)

Contact Details - Fire Stations/Sub Fire Stations/Fire Posts

Jurisdiction	Fire Stations/Posts	Name	Office Phone No.	Mobile No.	Email Id
Divisional Fire Officer Division, Shimla	Incharge FS Mall Shimla	Sh. Bal Krishan	0177-2652939	82196-37885	fs-mall-hp@gov.in
	Incharge FS Tilak Nagar	Sh. Shudhaker Prasad	0177-2830664	94595-37335	fs-tilaknagar@gov.in
	Incharge FS Chotta Shimla	Sh. Som Prakash	0177-2623269	89883-23894	fs-chhotashimla@gov.in
	Incharge FP Theog	Sh. Balbir Singh	01783-238101	94187-16480	-
	Incharge FP Sunni	Sh. Inder Dev	0177-2786201	86792-67799	-
Commandant Home Guard, 1st Bn. Kinnaur	Incharge FS Reckong Peo	Sh. Mansa Ram	01786-222219	94183-92631	fs-rpeo-hp@gov.in
Commandant Home Guard, 2st Bn. Shimla	Incharge FS Rampur	Sh. Keshav Negi	01782-233168	94189-39605	fs-rampur@gov.in
	Incharge FS Rohru	Sh. Laiq Ram	01781-240130	94186-85881	fs-rohru@gov.in
	Incharge FP Chopal	Sh. Gopal Dass	01783-260777	70186-30214	-
	Incharge FP Kumarsain	Sh. Raj Kumar	01782-241900	98165-30025	-
	Incharge FP Kotkhai	Sh. Kesar Singh	01783-255101	78072-50131	-
	Incharge FP Kwar	Sh. Shyam Nath	76509-29317	94592-12317	-
	Incharge FP Jubbal	Sh. Prem Chand	01781-252101	94590-46905	-
Commandant Home Guard, 4th Bn. Nahan	Incharge FS Nahan	Sh. Peenam Singh	01702-222500	94598-55702	fs-nahan@gov.in
	Incharge FS Paonta Sahib	Sh. Raj Kumar	01704-224466	94180-32077	fs-paontasahib@gov.in
	Incharge FP Kala Amb	Sh. Ram Kumar	01702-238600	98160-10169	-
	Incharge FP Shillai	Sh. Vinod Kumar	01704-278502	98163-34101	-

Commandant Home Guard, 5th Bn. Bilaspur	Incharge FS Bilaspur	Sh. Subash Chand	01978-222227	94592-42204	fs-bilaspur@gov.in
	Incharge SFS Jhandutta	Sh. Karam Chand	01978-272001	98160-50484	-
	Incharge FP Naina Devi	Sh. Pritam Singh	01978-288060	94599-11191	-
	Incharge FP Ghumarwin	Sh. Amit Lal	01978-254100	98177-88707	-
Commandant Home Guard, 6th Bn. Mandi	Incharge FS Mandi	Sh. Peer Sahai	01905-222900	98573-33453	fs-mandi@gov.in
	Incharge SFS Gohar	Sh. Tek Chand	01907-250101	98166-49651	-
	Incharge FP Joginder Nagar	Sh. Sher Singh	01908-222055	94183-78978	-
	Incharge FP Sarkaghat	Sh. Hem Raj	01905-231101	98160-53791	-
	Incharge FP Karsog	Sh. Harish Kumar	01907-222220	82788-68328	-
	Incharge FP Thunag	Sh. Diwan Chand	01907-257701	86791-75033	-
Commandant Home Guard, 7th Bn. Kullu	Incharge FS Kullu	Sh. Durga Singh	01902-222345	94593-41413	fs-kullu@gov.in
	Incharge FS Manali	Sh. Dhanjay	01902-252222	94186-21251	fs-manali@gov.in
	Incharge FP Kaylong	Sh. Lottam Ram	01900-202888	94186-95782	-
	Incharge FP Larji	Sh. Kartar Singh	76500-28201	98166-47998	-
	Incharge FP Anni	Sh. Surya Prakash	01904-253101	88946-46367	-
	Incharge FP Banjar	Sh. Gopi Chand	01903-221401	86288-95778	-
	Incharge FP Patlikuhal	Sh. Suraj Bhardwaj	01902-240101	98166-90977	-
Commandant Home Guard, 8th Bn. Chamba	Incharge FS Chamba	Sh. Kubaj Singh	01899-222290	94186-81496	fs-chamba@gov.in
	Incharge FP Banikhait	Sh. Raj Kumar	01899-254091	97361-53716	-
	Incharge FP Churah	Sh. Surinder Kumar	76509-92201	96257-38367	-
	Incharge FP Kharamukh	Sh. Jarnail Singh	76509-91902	98054-25803	-

	Incharge FP Salooni	Sh. Sufal Ram	01896-233645	88964-49901	-
Commandant Home Guard, 9th Bn. Dharamshala	Incharge FS Dharamshala	Sh. Saroop Kumar	01892-224992	94189-02453	fs-dharamshala@gov.in
	Incharge FS Kangra	Sh. Ashok Kumar	01892-264855	94593-61809	fs-kangra@gov.in
	Incharge FS Palampur	Sh. Thakur Dass	01894-230232	94187-66145	fs-palampur@gov.in
	Incharge FP Jawala ji	Sh. Vikramjeet Singh	01970-222207	88945-58212	-
	Incharge FP Nurpur	Sh. Arjun Singh	01893-226121	82788-43301	-
	Incharge FP Baijnath	Sh. Rajesh Gupta	01894-262010	70187-11818	-
	Incharge FP Jaisinghpur	Sh. Jitender Singh	01894-229101	94182-57181	-
	Incharge FP Nagrota Bagwan	Sh. Amar Nath	01892-250333	94187-59735	-
	Incharge FP Jawali	Sh. Ravinder Kumar	01893-264064	98166-61257	-
	Incharge FP Dehra	Sh. Pratap Singh	01970-233003	98054-72964	-
	Incharge FP Fatehpur	Sh. Anil Kumar	01893-256899	94189-44348	-
	Incharge FP Dada Siba	Sh. Birbal	01970-289011	98164-02157	-
	Incharge FP Sansarpur Terrece	Sh. Joginder Singh	82193-62458	98051-88490	-
Commandant Home Guard, 10th Bn. Hamirpur	Incharge FS Hamirpur	Sh. Rajender Kumar	01972-222533	94187-01603	fs-hamirpur@gov.in
	Incharge FP Sujanpur	Sh. Lalit Singh	01972-272833	94592-57932	-
	Incharge FP Bhijri	Sh. Rattan Chand	01972-283101	94591-34899	-
Commandant Home Guard, 11th Bn. Solan	Incharge FS Solan	Sh. Raja Ram	01792-223888	98820-92255	fs-solan@gov.in
	Incharge FS Parwanoo	Sh. Tek Chand	01792-233223	98050-22503	fs-parwanoo@gov.in
	Incharge FS Nalagarh	Sh. Rajinder Sen	01795-223294	70184-22124	fs-nalagarh@gov.in
	Incharge FS Baddi	Sh. Kuldeep Singh	01795-245352	94181-32117	fs-baddi@gov.in

	Incharge FS Arki	Sh. Rajinder Singh	01796-220146	85806-82142	-
	Incharge FP Banalgi	Sh. Rajesh Kumar	01792-284585	78761-95743	-
Commandant Home Guard, 12th Bn. Hamirpur	Incharge FS Una	Sh. Nitin Dhiman	01975-228101	94189-03501	fs-una@gov.in
	Incharge SFS Bangana	Sh. Rajesh Kumar	01975-263101	94590-94132	-
	Incharge FP Amb	Sh. Rakesh Kumar	01976-262101	98173-84756	-
	Incharge FP Tahliwal	Sh. Sunil Dutt	01975-257101	98176-48606	-

Annexure- 02 (A) : Fire Station, Mall Road

Equipments at the Fire Station, Mall Road, Shimla

S. #	Name of the Item	Quantity
1.	Fire Man Axe	05 Nos
2.	Short Branch	02 Nos
3.	Crow Bar	01 No
4.	Rubber Gloves	01 Pair
5.	Hydrant Adapter	05 Nos
6.	Delivery Hose Coupling	151 Pair
7.	Generator Shri Ram Honda	01 No
8.	Hydrant Key & Bar	04 Nos
9.	Delivery Hose With Coupling (RRL)	148 Nos
10.	Shovels	02 Nos
11.	Hand saw	01 No
12.	Nozzle Spanner	02 Nos
13.	Stand Pipe 2 Way	02 Nos
14.	Dividing Breaching	02 Nos
15.	Collecting Breaching	01 No
16,	Breathing Apparatus	01 No
17.	Combi Tool	01 No
18.	Water Mist & CAFS	01 No
19.	Helmets Fiver Glass	30 Nos
20.	Ceiling Hook	01 No
21.	CO_2 Extinguisher 4.5 Kg	13 Nos
22.	Bolt Cutter	01 No
23.	Non Skid Chain	04 Nos
24.	Stretcher (Stretcher Folding)	04+01 Nos
25.	Diffuser Branch	02 Nos
26.	Entry Suit (Aluminizes)	01 No
27.	Fire Bitter	03 Nos
28.	B.A Set Air Cylinder	04 Nos
29.	Rope Ladder	01 No 0343
30.	Full Body Harness	01 No

31.	CO_2 Cartridge for Riffling	34 No
32.	Asbestos Gaunt let	01 No
33.	Oil Fidder	01 No
34.	Can Oil 2 Ltrs	01 No
35.	Funnel for oil	01 No
36.	Portable Inflatable Emergency Light System	01 No
37.	Adwans water Tender HP 07B -0343	01 No
38.	Water Bowser HP63 3945	01 No
39.	Q.R.V HP 07C 0445	01 No
40.	Motor Cycle HP 07C 0438	01 No
41.	Disaster Management Equipment (Braking Tool)	01 No
42.	D.S.U	01 No
43.	Reflective jacket	06 Nos
44.	B.A Set	01 No
45.	HP 63A 3049 Small Water Tender	04+01 Nos

Equipments with the Motor Cycle | HP-07C 0438

S. #	Name of the Item	Quantity
1.	Water Mist (CAFS)	02 Nos
2.	Spair Compressed Air Cylinder (2 Litres Capacity)	01 No
3.	AFFF Standred Compound	05 Lts
4.	AFFF Special Compound	05 Lts

Equipments with the Water Tender | HP-07B 0343

S. #	Name of the Item	Quantity
1.	100 m.m Rubber Suction Hose-2.5 mtrs	04 Nos
2.	Suction Collecting Head 100 m.m- 2way	01 Nos
3.	Suction Strainer for-100 m.m	01 No
4.	Dividing Breaching with control	01 No
5.	Collecting Breaching	01 Nos
6.	Suction Wrenches	01 No

7.	Combined key Hydrant Cover	02 Nos
8.	Hose straps	06 Nos
9.	Branch with Revolving Head	01 No
10.	Nozzle Plain of various sizes for 63 m.m. (12,19 m.m.)	1 No.each
11.	Torch electric with 4 cell water proof	02 No
12.	Flame Proof Torch	02 Nos
13.	Foam Branch-FB5x with Pickup Tube	02 No
14.	Rope Polyamide-32 m.m. dia lowering line of 30mtrs.	01 No
15.	Rope Polyamide-12 m.m. dia Guy. line of 30mtrs.	01 No
16,	Rope Polyamide-24 m.m. dia long line of 30mtrs	01 No
17.	Rope Polyamide-22 m.m. dia Short ling of 20mtrs	01 No
18.	Hose Bandages	04 Nos
19.	Hose Slings	02 Nos
20.	Rubber Gloves	4 Pairs
21.	Leather Gloves	2 Pairs
22.	Canvas Gloves	2 Pairs
23.	Axe Large	02 Nos
24.	Pick Axe	02 Nos
25.	Fireman Axe	04 Nos
26.	Spade with Wooden Handle	01 No
27.	Crow bar of 6 E.T Long	02 Nos
28.	Spanner Adjustable-30c.m.long	01 No
29.	Jack Hydrant for 20 ton capacity	01 No
30.	Oil Feeder	01 No
31.	Funnel-300m.m. dia made from G1	01 No
32.	Hammer Sledge-10 kg	01 No
33.	Hammer Sledge- 5 Kg	01 No
34.	Suction Adaptor 100m.m	01 No
35.	Adaptor 63 m.m Male to 38 m.m. Female	02 Nos
36.	Adaptor 63 m.m Female to 38 m.m.	01 No
37.	Tool Kit (Fixed Spanners Ring Spanner screw Drivers)	01 No
38.	Belt Hook	01 No
39.	Selectable flow Nozzle	01 No

40.	Branch Pipe-63 m.m.	01 No
41.	Sand Bag Canvas Round Shape	02 Nos
42.	Cap Hydrant Spindle	01 No
43.	Cap Hydrant Spindle New Pattern	01 No
44.	Chisel Cold	02 Nos
45.	Hose Clamp	04 Nos
46.	Bolt Cutter	01 No
47.	Hammer Ball Pein	01 No
48.	Hook Ceiling	01 No
49.	Hook Anchor	01 No
50.	Knife Salvage	01 No
51.	Tyre Lever	01 No
52.	Plier Cutting	01 No
53.	Plier Insulated	01 No
54.	Petrol Chain Saw Machine 600 m.m Guide Bar length	01 No
55.	Rake Three Prong	01 No
56.	Hose Ramp	04 Nos
57.	Saw Carpenter-300 m.m	01 No
58.	Shovel with Spanner	01 No
59.	Nozzle Spanner	01 No
60.	Strainer Wicker with Canvas Hood	01 No
61.	Branch Pipe-63 m.m.	01 No
62.	Sand Bag Canvas Round Shape	02 Nos
63.	Cap. Hydrant Spindle	01 No
64.	Cap Hydrant Spindle New Pattern	01 No
65.	Chisel Cold	02 Nos
66.	Hose Clamp	04 Nos
67.	Bolt Cutter	01 No
68.	Hammer Ball Pein	01 No
69.	Hook Ceiling	01 No

Equipments with the Water Bowser | HP-63 3945

S. #	Name of the Item	Quantity
1(a)	Hose Clamps	25
1(b)	Hose Bandage	25
1(c)	Hose Slings	20
1(d)	Hose Straps	20
2.	Suction Hose Dia 100 M.M	04
3.	3 Way Suction Collection Head 100 M.M size	01
4.	Suction Wrenches	02
5.	Suction Strainer 100 M.M Size steel	01
6.	Basket Strainer	01
7.	Dividing Breaching with Control	01
8.	Collecting Breaching	01
9.	Hydrant Stand Pipe Two Way	01
10(a)	Double Female Coupling	02
10(b)	Hydrant Connection 63 M.M Size	02
10(c)	Combined key For Hydrant	02
11.	Fog Nozzle with Extension Applicator	01
12.	Hand Controlled Branch	01
13.	Branch pipe Universal	01
14.	Branch with Revolving Head	01
15.	Short Branch (Branch Pipe)	04
16(a)	Suction Adopter 10M.M Size	01
16(b)	Adopter Double Female Instantaneous Patten	02
16(c)	Adopter Double Male	02
17.	Foam marking Branch F.B. 10 x	01
18.	Foam Making Branch F.B. 5 x	01
19.	20Lowering Line 50 M.M Hemp or Terrylene 40 M.	01
20.	Long Line 50 M.M Manila -30 M Long	01
21.	Short Line Manila-15 M. Long	01
22.	Canvas Buckets	02
23.	First-Aid Box	01
24.	Rubber Gloves	1 pair

25.	Asbestos Gauntlets	1 pair
26.	Axe Large	01
27.	Spade	01
28.	Pick Axe	01
29.	Crow Bar	01
30.	Sledge Hammer	01
31.	Car Panter saw	01
32.	Spanner Adjustable	01
33.	Door Breaker	01
34.	Hydrant Jack	01
35.	Hydrant Jack	01
36.	Fire Hook	-
37.	Hydrant Jack	01
38.	Hydrant Jack	01
39.	Hydrant Jack	01
40.	Fire Hook	-
41.	Hydrant Jack	01
42.	Hydrant Jack	01
43.	Hydrant Jack	01
44.	Fire Hook	-
45.	Hydrant Jack	01
46.	Fire Hook	-
47.	Hydrant Jack	01
48.	Tool Kit (Wheel Pana) (24.27 Spair Wheel Pana)	01
49.	Grease Gun	-
50.	Oil Feeder	01
51.	Can Oil- 2 Liters	-
52.	Funnel for Oil or Fuel Filling 250 M.M	-
53.	File Bastard 30 C.M	-

Equipments with the Quick Response Vehicle | HP-07C 0445

S. #	Name of the Item	Quantity
1.	Mounted high pressure pump with Hose Reels and accessories	01
2.	CO_2 Extinguisher 4.5 Kg	01
3.	Rope	01
4.	Stretcher	01
5.	Suction Pipe	01

Other Equipments

S. #	Name of the Item	Quantity
1.	Hilti DCH-300 Electric hand held Diamand cutter	01 No
2.	Hilti cutting DiscDc-D 305/22UP	-
3.	Hitt chuck DCH 300Bar	01 No
4.	Hilti Band Assembly	01 No
5.	Hilti D CG_180-P Angle Grinde	01 No
6.	Hilti Cutting Disc AC-D-180UP 2.5mm	09 Nos
7.	Hilti Diamand Cutting Disc DC-D 180/22.2/GPx5	03 Nos
8.	Hilti DCG 125-S Angle Grinder with Discs	08 Nos
9.	Hilti Cutting Disc AC-D 125 UP 2.5mm	13 Nos
10.	Hilti Diamand Cutting Disc DC-D 125/22/2/GPXS	3 Nos
11.	Hilti TE 1000/AVR Breaker	01 No
12.	Hilti pointed Chisel TE-SP Sm36	02 Nos
13.	Hilti Narrow Flat Chisel TE-SP FM 36	01 No
14.	Hilti 700 AVR Breaker	01 No
15.	Hilti pointed Chisel TE-YPSM 36	05 Nos
16,	Hilti Narrow flat Chisel TE-VP FM 36	02 Nos
17.	Hilti Battery Pack B 36/3.0 Li-10	01 No
18.	Hilti Cordless Rotery Hammer TE-6-A-36-AVR	01 No
19.	Hilti Battery Charger C 4.36-ACS Li-ion	01 No
20.	Hilti Hammer Drilil Bit TE-CX 16/27	02 Nos
21.	Hilti Hammer Drill Bit TE-CX 20/22	02 Nos
22.	Hilti Depth Guage DCH-300	01 No

Annexure- 02 (B) : Fire Station, Chhota Shimla

Equipments with the Water Tender Type B | HP-63 3944

S. #	Name of the Item	Quantity
1.	Aluminum Ext Ladder	01 No
2.	Ceiling Hook	02 No
3.	Suction Hose 63 mm	02 No
4.	Suction Hose 75 mm	01 No
5.	Suction Hose 100 mm	04 No
6.	Delivery Hose 15 Metter	12 No
7.	Delivery Hose 30 Metter	03 No
8.	Suction Hose 75 mm	02 No
9.	Stretcher	01 No
10.	Rope Ladder	01 No
11.	Pump	01 No
12.	Basket Stunner	01 No
13.	Pickup Tube	02 No
14.	Chain Saw	01 No
15.	Cumby Tool	01 No
16.	Low Pressure Applicator	01 No
17.	B.A. Set	01 No
18.	CO_2	01 No
19.	Lowering Line 50mm 40mtr	01 No
20.	Caramantle Rope 15mtr	01 No
21.	Caramantle Rope 30mtr	01 No
22.	Nylon Rope 15mtr	01 No
23.	Seawall	01 No
24.	Crow Bar	01 No
25.	Pick Axe	01 No
26.	Fire man Axe	03 No
27.	Axe Large	01No
28.	Hammer	01 No
29.	Spade	01 No
30.	Stand Pipe with Two Way	01 No

31.	Spreader	01 No
32.	Long Line 50mm 30mrt	01 No
33.	Short Branch ½ inch	01 No
34.	Short Branch ¾ inch	01 No
35.	Universal Branch	01 No
36.	Fog Nozzle	01 No
37.	London Hand Control Branch	01 No
38.	Multi Purpose Branch	01 No
39.	Revolving Head Branch	01 No
40.	Female to Female Branch 63 mm	02 No
41.	Male to Male Branch 63 mm	02 No
42.	Hydrant Adapter 63 mm	01 No
43.	Suction Adapter 4 inch	02 No
44.	Mattel Stunner 4 inch	01 No
45.	Mattel Stunner 3 inch	01 No
46.	Dividing Branching Control	01 No
47.	Nozzle ½ inch ¾ inch 1 inch	03 No
48.	Spanner	01 No
49.	Foam Drum	03 No
50.	Stopper	01 No
51.	FB 5 x with Pickup Tube	01 No
52.	AFT	01 No
53.	Helmet	07 No
54.	First Aid Box	01 No
55.	Rubber Gloves	01 No
56.	Canvas Gloves	01 No
57.	Tool Box	01 No
58.	Hose Shut up Machine	01 No
59.	Hose Bandage	01 No
60.	Door Breaker	01 No
61.	Hose Clamp	04 No

Equipments with the Mini Water Tender | HP-63A 3051

S. #	Name of the Item	Quantity
1.	Aluminum Ext Ladder	01 No
2.	Multipurpose Branch	02 No
3.	Short Branch	02 No
4.	Metal Stunner 4 inch	01 No
5.	Female to Female Adapter	01 No
6.	Dividing Breaching Control	01 No
7.	Collecting Breaching	01 No
8.	Tyre Lever	01 No
9.	Wheel Panna	01No
10.	Jack Hydraulic	01 No
11.	Kernmantle Rope	04 No
12.	Tool Box	01 No
13.	Salvage Knife	02 No
14.	Saw	01 No
15.	Bolt Cutter	01 No
16.	Pickup Tube	01 No
17.	FB 5x with Tube	01 No
18.	Universal Wrench	01 No
19.	Jack	01 No
20.	Hose 15 mtr	10 No
21.	Siling Hook	01 No
22.	Suction Hook	01 No
23.	Foam Drum	02 No
24.	Rubber Gloves	03 Pairs
25.	Fire man Axe	02 No
26.	Stretcher	01 No
27.	Pick Axe	01 No
28.	Wooden Stopper	02 No
29.	Sawal	01 No
30.	Large Axe	01 No
31.	Hammer	01 No

32.	Crow Bar	01 No
33.	Chain Saw	01 No
34.	Key and Bar	02 No

Equipments with the Water Tender | HP-3C 1410

S. #	Name of the Item	Quantity
1.	Water Tender Type "B" HP 3C-1410 with Accessories	01 No
2.	100 mm Rubber Suction hose	04 No
3.	Suction Strainer	01 No
4.	Dividing Breeching 63 mm	01 No
5.	Dividing Breeching with Control	01 No
6.	Suction Wrench	01 No
7.	Combined Key for Hydrant Cover	02 No
8.	Hose Straps	06 No
9.	Torch Electronic with 4 Cell Water Proof	02 No
10.	F.B SX Branch with Pickup Tube	01 No
11.	Flam Proof Tourch	02 No
12.	Rope Kernmantle 16mm dia 50mtrs	01 No
13.	Rope Kernmantle 14mm dia 30mtrs	01 No
14.	Rope Kernmantle 12mm dia 30mtrs	01 No
15.	Rope Kernmantle 10mm dia 20mtrs	01 No
16.	Hose Bandage	04 No
17.	Hose Slings	02 No
18.	Rubber Gloves	04 Pairs
19.	Leather Gloves	2 Pairs
20.	Canvas Gloves	2 Pairs
21.	Axe Large	01 No
22.	Pick Axe	01 No
23.	Fireman Axe	02 No
24.	Spade with Wooden Handle	01 No
25.	Crow Bar	02 No
26.	Spanner Adjustable	01 No

27.	Jack Hydraulic	01 No
28.	Oil Feeder Slandered Capacity	01 No
29.	Funnel 300 mm dia	01 No
30.	Hammer Sledge with Wooden Handle 10 Kg	01 No
31.	Hammer Sledge with Handle 5 Kg	01 No
32.	Suction Adapter Gm 100mm Female X 63mm (Gm)	01 No
33.	Adapter 63 mm Male 38mm Female Gm	02 No
34.	Adapter 63 mm Female	01 No
35.	Tool Kit	01 No
36.	Belt Hook	01 No
37.	Selectable Flow Nozzle Made of Aluminum Alloy 63 mm Size	02 No
38.	Branch pipe 63 mm male	01 No
39.	Cap Hydrant Spindle	01 No
40.	Cap Hydrant Spindle New Pattern	01 No
41.	Chisel Cold	02 No
42.	Hose Clamp	04 No
43.	Bolt Cutter 600mm Long	01 No
44.	Hook Cieling	01 No
45.	Hook Anchor	01 No
46.	Knife Salvage	01 No
47.	Tyre Lever	01 No
48.	Plier Cutting	01 No
49.	Plier Insulated	01 No
50.	Petrol Chainsaw Machine 600mm with Space Chain	01 No
51.	Rack Three Prong	01 No
52.	Hose Ramp (Rubber)	04 No
53.	Saw Carpenter 300mm	01 No
54.	Shovel with handle	01 No
55.	Nozzle Spener	01 No
56.	BA Set with Spare Cylinder	01 Set
57.	Delivery hose 63 mm 100 Fit	10 No
58.	Stretcher(Two Fold)	02 No
59.	Frist Aid Box For 10 person	01 No

60.	Rubber Washer 63mm For delivery Hose	50 Nos
61.	Aluminium Extension Ladder	01 No
62.	Wheel Stoper	02 No
63.	Search Light with 30mtrs Cable	01 No
64.	High Pressure guns	01 No
65.	"4"n Pump Blanks Caps	01 No
66.	Spark Arresters	02 No
67.	Proximitic Suit, Helmet, Gloves, Gum Boot	01 No
68.	Foam Drum 20 Ltrs each	03 No
69.	Log Book	01 No

Equipments with the Motor Cycle | HP-07 4864

S. #	Name of the Item	Quantity
1.	Motor Cycle with Accessories	01 No
2.	Log Book	01 No
3.	Registration Certificate	01 No
4.	Maintenance Book	01 No
5.	Battery Warranty card	01 No
6.	Battery Fitted	01 No
7.	Tyre Fitted 079832565,049904435	02 No
8.	Tool=O Plug	01 No
9.	Screw Driver	01 No
10.	Spanner	04 No

Equipments with the Quick Response Vehicle | HP-07C 0446

S. #	Name of the Item	Quantity
1.	Q.R.V./ Jeep HP-07C 0446	01 No
2.	Jack with Rod	01 No
3.	Wheel Panna	01 No
4.	Screw Driver	01 No
5.	Panna	01 No

6.	D.U Spanner	05 No
7.	L. key	01 No
8.	Add. Hose Pipe 30 mtrs	01 Drum
9.	Foam Compound	05 Ltr.
10.	Suction Pipe	01 No
11.	Suction L. Key	01 No
12.	Warning Triangle	01 No
13.	Extension Rod	01 No
14.	Service Book	01 No
15.	Log Book	01 No
16.	Pump Operation Manual	01 No
17.	Adjustable Spanner	01 No

Annexure- 02 (C) : Fire Station, Tilak Nagar

Equipments at the Fire Station, Tilak Nagar

S. #	Name of the Item	Quantity
1.	DSU	01 No
2.	Crow Bar	03 No
3.	Collecting Breaching	02 No
4.	Collecting Head	02 No
5.	Reflector Jackets	06 No
6.	CO_2 Extinguisher (4.5 Kg)	02 No
7.	Dividing Breaching	02 No
8.	Diffuser Branch	01 No
9.	DCP Extinguisher (2 Kg)	01 No
10.	Fire Man Axe	07 No
11.	Fog Nozzle	02 No
12.	FB 5X Branch	01 No
13.	First Aid Box	01 No
14.	Female Adapter	01 No
15.	Foam Type Extinguisher	02 No
16.	RRL Hose	78 No
17.	Hydrant Key With Tommy Bar	01 No
18.	Hydrant Stand Pipe	03 No
19.	Hydrant Adapter	03 No
20.	Hose Straps	10 No
21.	Fire Beater	06 No
22.	Large Axe	01 No
23.	Male Adapter	3 No
24.	Nozzles Different Sizes	09 No
25.	Nozzle Spanner	02 No
26.	Non Skid Chains	02No
27.	Pick Axe	01 No
28.	28 Revolving Branch	02 No
29.	Short Branch	02 No
30.	Shovel	02 No

31.	Electric Torch	02 No
32.	Tarpaulin	02 No
33.	Ropes & Lines	05 No
34.	Rope Ladder	03 No
35.	Saw	01 No
36.	Rubber Gloves	02 Pair
37.	B.A. Set	01 No
38.	Stretcher	03 No
39.	Toe Chain	01 No
40.	Water Type Extinguisher	01 No
41.	Battery Charging Set	01 No
42.	Selection Flow Nozzle 63MM	01 No
43.	Resuscitation Apparatus	01 No
44.	Canvas Bucket	03 No
45.	Full Body Harness	01 No
46.	Hose Sling	05 No
47.	Water Mist &CAFS Fire Extinguisher	01 set
48.	Carpenter Saw	01 No
49.	Hydrolic Jack 7.5 Tone	01 No
50.	Hose Clamp	01 No

Equipments with the Quick Response Vehicle | HP-07C 0485

S. #	Name of the Item	Quantity
1.	Additional Hose 30mtrs. With Drum	01 No
2.	Suction Pipe	01 No
3.	Adjustable Spanner	01 No
4.	Fire Man Axe	02 No
5.	CO_2 Ext. 4.5 kg cap	01 No

Equipments with the Water Bowser | HP-63 3942

S. #	Name of the Item	Quantity
1.	Chisel	01 No
2.	Small Hammer	01 No
3.	Foam Pickup Tube	01 No
4.	Aluminum Ext. Ladder 10.5 mtrs.	01 No
5.	Hose Clamps	25 Nos
6.	Hose Bandage	25 Nos
7.	Hose Sling	20 Nos
8.	Hose Straps	20 Nos
9.	Suction Hose 100mm	04 Nos
10.	Suction Wrench	1 Pair
11.	Suction Collecting Head	01 No
12.	Suction Strainer	01 No
13.	Dividing Breeching	01 No
14.	Collecting Breaching	01 No
15.	Hydrant Stand Pipe one way	01 No
16.	Female Coupling	02 Nos
17.	Hydrant Connection 1 mtr.	02 Nos
18.	Female coupling different type	02 Nos
19.	Combined Hydrant Key	01 No
20.	Fog Nozzle With Applicator	01 No
21.	L/Hand Control Branch	01 No
22.	Branch Pipe Universal	01 No
23.	Branch With Revolving Head	01 No
24.	Branch Pipe (903)	04 Nos
25.	Female Suction Adaptor 100mm	02 Nos
26.	Female Adaptor 63mm	02 Nos
27.	Male Adaptor 63mm	02 Nos
28.	Foam Making Branch FB-10X	01 No
29.	Foam Making Branch FB-5X	01 No
30.	Lowering Line 50mm (40mtrs.)	01 No
31.	Long Line 50mm (30mtrs.)	01 No

32.	Short Line 50mm (15mtrs.)	01 No
33.	Canvas Bucket	02 Nos
34.	First Aid Box	01 No
35.	Rubber Gloves	1 Pair
36.	Asbestos Gauntlet	1 Pair
37.	Axe Large	01 No
38.	Spade	01 No
39.	Pick Axe	01 No
40.	Crow Bar	01 No
41.	Sledge Hammer	01 No
42.	Carpenter Saw	01 No
43.	Spanner Adjustable 30cm	01 No
44.	Door Braker	01 No
45.	Hydraulic Jack	01 No
46.	Fire Hook	01 No
47.	Delivery Hoses	16 Nos

Equipments with the Combined Foam & CO2 Tender | HP-07C 2536

S. #	Name of the Item	Quantity
1.	Suction Hose 100mm	04 Nos
2.	Combi Tool	01 No
3.	Suction Strainer	01 No
4.	Dividing Breeching with Control	01 No
5.	Collecting Breaching	25 Nos
6.	Suction Wrench	1 Pair
7.	Combined Hydrant Key	02 Nos
8.	Torch 4 Cell	02 Nos
9.	Flame Proof Torch	02 Nos
10.	FB 5X 2	02 Nos
11.	Rope Kernmantle 16mm dia. 50 mtr.	01 No
12.	Rope Kernmantle 12mm dia. 30 mtr.	01 No
13.	Rope Kernmantle 14mm dia. 30 mtr.	01 No

14.	Rope Kernmantle 10mm dia. 20 mtr.	01 No
15.	Hose Bandage	04 Nos
16.	Rubber Gloves	4 Pairs
17.	Leather Gloves	2 Pair
18.	Canvas Gloves	2 Pair
19.	Axe Large	02 Nos
20.	Pick axe	01 No
21.	Fire Man Axe	02 Nos
22.	Spade	01 No
23.	Crow bar	02 Nos
24.	Spanner Adjustable	01 No
25.	Hydraulic Jack With Rod	01 No
26.	Sledge Hammer	01 No
27.	Female to Female Adaptor	01 No
28.	Belt Hook	01 No
29.	Selectable Flow Nozzle	03 Nos
30.	Short Branch	01 No
31.	Cap Hydrant Spindle	01 No
32.	Cap Hydrant Spindle New Pattern	01 No
33.	Bolt Cutter	01 No
34.	Hook Celling	01 No
35.	Knife Salvage	01 No
36.	Plier Cutting	01 No
37.	Plier Insulated	01 No
38.	Petrol Chain Saw with spare chain	01 No
39.	Saw Carpenter	01 No
40.	Shovel	01 No
41.	Nozzle Spanner	01 No
42.	B.A. Set	1 Set
43.	Delivery Hoses 30 mtr.	15 No
44.	Stretcher(Two Fold)	02 Nos
45.	First Aid Box	01 No
46.	Extension Ladder 10.5 mtr.	01 No

47.	Adaptor Male to Male	01 No
48.	Spark arrestor	01 No
49.	Foam Pick up Tube	01 No
50.	Additional Hose Reel	01 No
51.	Shutter Hinges	02 Nos
52.	Pick Up Tube For Monitor	01 No
53.	Tripod Stand for Search Light	01 No
54.	HILTI- Breaker/Cutter/Grinder 1 Set	01 No

Annexure- 03 (A) : Geo-tagged Dataset of Fire Hydrants in Shimla City

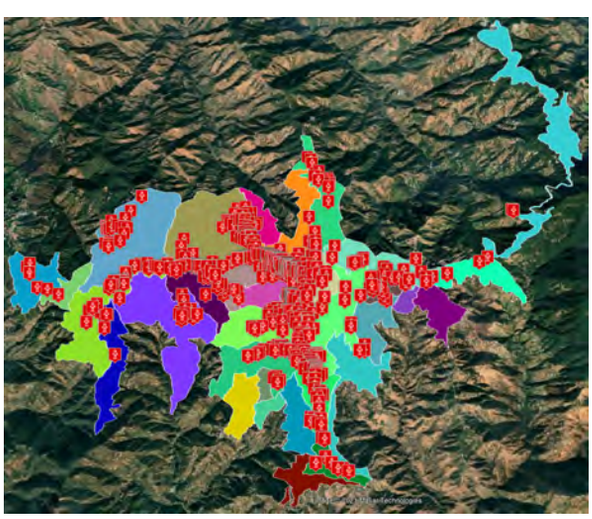
Fully functional Fire Hydrants are vital to firefighting in cities where a fire may get out of control in a matter of few minutes. Having the access to regularly updated information about the location and status of Fire Hydrants in a city can be the difference between a minor fire accident to a disastrous event. Considering this, the Department of Fire Services, Government of Himachal Pradesh and Doers jointly conducted the Geo-tagged mapping of the Fire Hydrants under a project aimed at the formulation of Fire Disaster Management Plan for Shimla city.

The Data obtained from the field was further cleaned and rendered into user-friendly KML files which can be easily viewed on Google Earth platform without requiring any special software or paid license. The goal of this exercise is to maintain a dataset of the Fire Hydrants which can be updated regularly for effective decision making at the time of a Fire event in the city.

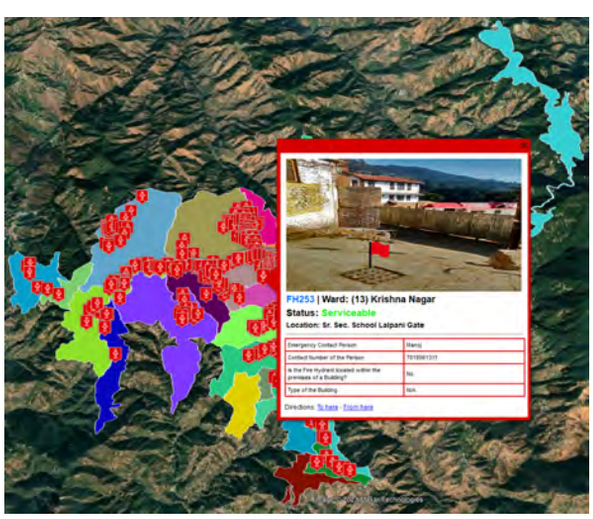
The folder containing the KML Files of the Fire Hydrants can be downloaded either by accessing the following link or scanning the QR code.

bit.ly/fh_shimla

After downloading the folder in a Computer, the KML files can be viewed and analyzed using Google Earth software. The Fire Hydrants can be viewed on Ward boundaries or without boundaries.



All Fire Hydrants on Ward Boundaries



Information Balloon of a Fire Hydrant

Annexure- 03 (B) : List of Fire Hydrants in Shimla City (Location and Status)

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
BHA001	(1) Bharari	31.1164977, 77.1804384	08-02-2021	Unserviceable		
BHA002	(1) Bharari	31.1067838, 77.1786013	07-02-2021	Serviceable		
BHA003	(1) Bharari	31.1091238, 77.1785791	08-02-2021	Serviceable		
BHA004	(1) Bharari	31.1194641, 77.1802652	08-02-2021	Unserviceable		
BHA005	(1) Bharari	31.1204097, 77.180009	08-02-2021	Unserviceable		
BHA006	(1) Bharari	31.1192047, 77.1801441	08-02-2021	Serviceable		
BHA007	(1) Bharari	31.1206045, 77.1778551	08-02-2021	Unserviceable		
BHA008	(1) Bharari	31.1213438, 77.1769289	08-02-2021	Serviceable		
BHA009	(1) Bharari	31.1246702, 77.1757556	08-02-2021	Serviceable		
BHA010	(1) Bharari	31.1136892, 77.1767087	08-02-2021	Serviceable		
BHA011	(1) Bharari	31.1088505, 77.1782651	08-02-2021	Serviceable		
BHA012	(1) Bharari	31.108458, 77.1787965	08-02-2021	Serviceable		
BHA013	(1) Bharari	31.1086091, 77.1825358	08-02-2021	Unserviceable		
BHA014	(1) Bharari	31.119906, 77.1803648	08-02-2021	Serviceable		
BHA015	(1) Bharari	31.1207993, 77.1798438	08-02-2021	Serviceable		
BHA016	(1) Bharari	31.1222696, 77.1778239	08-02-2021	Unserviceable		
BHA017	(1) Bharari	31.1239646, 77.1761294	08-02-2021	Serviceable		
BHA018	(1) Bharari	31.1250973, 77.1750171	08-02-2021	Serviceable		
BHA019	(1) Bharari	31.1091279, 77.1772671	08-02-2021	Serviceable		
BHA020	(1) Bharari	31.1108858, 77.17827	08-02-2021	Unserviceable		
BHA021	(1) Bharari	31.1063584, 77.1782215	09-02-2021	Serviceable		
BHA022	(1) Bharari	31.1062488, 77.1823221	09-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
RUL001	(2) Ruldu Bhatta	31.1061193, 77.1689978	21-01-2021	Serviceable		
RUL002	(2) Ruldu Bhatta	31.1058169, 77.1701302	21-01-2021	Unserviceable		
RUL003	(2) Ruldu Bhatta	31.1054446, 77.1714689	21-01-2021	Serviceable		
RUL004	(2) Ruldu Bhatta	31.1057571, 77.1701623	21-01-2021	Unserviceable		
RUL005	(2) Ruldu Bhatta	31.1056752, 77.175128	07-02-2021	Serviceable		
RUL006	(2) Ruldu Bhatta	31.107315, 77.1716131	07-02-2021	Serviceable		
RUL007	(2) Ruldu Bhatta	31.106805, 77.175426	09-02-2021	Unserviceable		
RUL008	(2) Ruldu Bhatta	31.1053278, 77.172368	12-02-2021	Serviceable		
RUL009	(2) Ruldu Bhatta	31.1048913, 77.1733225	12-02-2021	Unserviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
KAI001	(3) Kaithu	31.10848, 77.1659225	10-02-2021	Serviceable		
KAI002	(3) Kaithu	31.1076914, 77.1658529	10-02-2021	Serviceable		
KAI003	(3) Kaithu	31.105249, 77.1640192	29-01-2021	Serviceable		
KAI004	(3) Kaithu	31.1049899, 77.1632245	29-01-2021	Serviceable		
KAI005	(3) Kaithu	31.1043903, 77.1621265	29-01-2021	Serviceable		
KAI006	(3) Kaithu	31.1054039, 77.1650244	29-01-2021	Serviceable		
KAI007	(3) Kaithu	31.1102108, 77.1642309	09-02-2021	Serviceable		
KAI008	(3) Kaithu	31.1110996, 77.1643534	09-02-2021	Serviceable		
KAI009	(3) Kaithu	31.1114009, 77.1636014	09-02-2021	Unserviceable		
KAI010	(3) Kaithu	31.1127079, 77.1633115	09-02-2021	Serviceable		
KAI011	(3) Kaithu	31.1124826, 77.1636182	09-02-2021	Serviceable		
KAI012	(3) Kaithu	31.1092607, 77.165454	09-02-2021	Serviceable		
KAI013	(3) Kaithu	31.1098716, 77.1646982	09-02-2021	Serviceable		
KAI014	(3) Kaithu	31.1106865, 77.1636544	09-02-2021	Serviceable		
KAI015	(3) Kaithu	31.1102044, 77.1638057	09-02-2021	Serviceable		
KAI016	(3) Kaithu	31.1106687, 77.1648396	09-02-2021	Serviceable		
KAI017	(3) Kaithu	31.1119812, 77.1634962	09-02-2021	Serviceable		
KAI018	(3) Kaithu	31.1133852, 77.1628631	09-02-2021	Serviceable		
KAI019	(3) Kaithu	31.1120166, 77.1643486	09-02-2021	Serviceable		
KAI020	(3) Kaithu	31.1094024, 77.1652775	09-02-2021	Serviceable		
KAI021	(3) Kaithu	31.1084188, 77.1662037	10-02-2021	Serviceable		
KAI022	(3) Kaithu	31.1094344, 77.165113	10-02-2021	Unserviceable		
KAI023	(3) Kaithu	31.1095621, 77.164659	10-02-2021	Serviceable		
KAI024	(3) Kaithu	31.109144, 77.1643534	10-02-2021	Serviceable		
KAI025	(3) Kaithu	31.1085719, 77.1643633	10-02-2021	Serviceable		
KAI026	(3) Kaithu	31.1088074, 77.1637516	10-02-2021	Serviceable		
KAI027	(3) Kaithu	31.1089799, 77.1631348	10-02-2021	Serviceable		
KAI028	(3) Kaithu	31.1092813, 77.1621114	10-02-2021	Serviceable		
KAI029	(3) Kaithu	31.1140987, 77.164473	10-02-2021	Unserviceable		
KAI030	(3) Kaithu	31.113875, 77.1637462	10-02-2021	Unserviceable		
KAI031	(3) Kaithu	31.1126803, 77.1642394	10-02-2021	Serviceable		
KAI032	(3) Kaithu	31.1117382, 77.1657152	10-02-2021	Serviceable		
KAI033	(3) Kaithu	31.1122558, 77.1660058	10-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
ANN001	(4) Annadale	31.1035978, 77.1605096	29-01-2021	Serviceable		
ANN002	(4) Annadale	31.1116144, 77.1610584	10-02-2021	Serviceable		
ANN003	(4) Annadale	31.1024864, 77.147713	28-01-2021	Unserviceable		
ANN004	(4) Annadale	31.1025311, 77.1498608	28-01-2021	Serviceable		
ANN005	(4) Annadale	31.1021867, 77.1512268	28-01-2021	Serviceable		
ANN006	(4) Annadale	31.1033065, 77.1491995	28-01-2021	Unserviceable		
ANN007	(4) Annadale	31.1032344, 77.1528698	28-01-2021	Serviceable		
ANN008	(4) Annadale	31.1031395, 77.1492639	28-01-2021	Unserviceable		
ANN009	(4) Annadale	31.1028278, 77.1517974	28-01-2021	Serviceable		
ANN010	(4) Annadale	31.1033126, 77.1528737	28-01-2021	Unserviceable		
ANN011	(4) Annadale	31.1050977, 77.1517685	28-01-2021	Serviceable		
ANN012	(4) Annadale	31.1045356, 77.1526032	28-01-2021	Serviceable		
ANN013	(4) Annadale	31.1033491, 77.1546535	29-01-2021	Serviceable		
ANN014	(4) Annadale	31.1033552, 77.154785	29-01-2021	Unserviceable		
ANN015	(4) Annadale	31.1033141, 77.155582	29-01-2021	Unserviceable		
ANN016	(4) Annadale	31.1032538, 77.1560173	29-01-2021	Serviceable		
ANN017	(4) Annadale	31.1032884, 77.1571829	29-01-2021	Unserviceable		
ANN018	(4) Annadale	31.1033983, 77.1578305	29-01-2021	Serviceable		
ANN019	(4) Annadale	31.1052802, 77.1641	29-01-2021	Unserviceable		
ANN020	(4) Annadale	31.103467, 77.1589715	30-01-2021	Unserviceable		
ANN021	(4) Annadale	31.1066381, 77.1513421	30-01-2021	Serviceable		
ANN022	(4) Annadale	31.1081244, 77.1515992	30-01-2021	Unserviceable		
ANN023	(4) Annadale	31.1055615, 77.1538861	30-01-2021	Serviceable		
ANN024	(4) Annadale	31.104289, 77.1581662	30-01-2021	Serviceable		
ANN025	(4) Annadale	31.103407, 77.1541379	30-01-2021	Serviceable		
ANN026	(4) Annadale	31.103354, 77.1541253	30-01-2021	Unserviceable		
ANN027	(4) Annadale	31.1033503, 77.1548914	30-01-2021	Serviceable		
ANN028	(4) Annadale	31.1033232, 77.1550847	30-01-2021	Serviceable		
ANN029	(4) Annadale	31.1034816, 77.1582668	30-01-2021	Unserviceable		
ANN030	(4) Annadale	31.1125448, 77.1625971	10-02-2021	Serviceable		
ANN031	(4) Annadale	31.1147383, 77.1613808	10-02-2021	Serviceable		
ANN032	(4) Annadale	31.11503, 77.1631508	10-02-2021	Serviceable		
ANN033	(4) Annadale	31.1137196, 77.1609624	10-02-2021	Serviceable		
ANN034	(4) Annadale	31.1124245, 77.1614547	10-02-2021	Unserviceable		
ANN035	(4) Annadale	31.1122877, 77.1599297	10-02-2021	Serviceable		
ANN036	(4) Annadale	31.1125277, 77.1595276	10-02-2021	Serviceable		
ANN037	(4) Annadale	31.1112082, 77.1587165	10-02-2021	Serviceable		
ANN038	(4) Annadale	31.1119936, 77.1603017	10-02-2021	Serviceable		
ANN039	(4) Annadale	31.1124578, 77.1621553	10-02-2021	Serviceable		
ANN040	(4) Annadale	31.1080628, 77.1646974	18-02-2021	Serviceable		

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SUM001	(5) Summer Hill	31.1081468, 77.1392953	01-02-2021	Serviceable		
SUM002	(5) Summer Hill	31.1092021, 77.1397806	01-02-2021	Serviceable		
SUM003	(5) Summer Hill	31.110934, 77.1391343	01-02-2021	Serviceable		
SUM004	(5) Summer Hill	31.1123037, 77.139999	01-02-2021	Serviceable		
SUM005	(5) Summer Hill	31.1153441, 77.1416158	01-02-2021	Serviceable		
SUM006	(5) Summer Hill	31.1094321, 77.1390226	01-02-2021	Serviceable		
SUM007	(5) Summer Hill	31.1092878, 77.1383744	01-02-2021	Serviceable		
SUM008	(5) Summer Hill	31.1097333, 77.1376355	01-02-2021	Serviceable		
SUM009	(5) Summer Hill	31.1105744, 77.1358965	01-02-2021	Serviceable		
SUM010	(5) Summer Hill	31.1093897, 77.1361328	01-02-2021	Serviceable		
SUM011	(5) Summer Hill	31.1095645, 77.1352471	01-02-2021	Serviceable		
SUM012	(5) Summer Hill	31.1091342, 77.1356014	01-02-2021	Serviceable		
SUM013	(5) Summer Hill	31.1092274, 77.1354229	01-02-2021	Serviceable		
SUM014	(5) Summer Hill	31.1097715, 77.1347867	01-02-2021	Serviceable		
SUM015	(5) Summer Hill	31.1094376, 77.1348092	01-02-2021	Serviceable		
SUM016	(5) Summer Hill	31.1090449, 77.1350892	01-02-2021	Serviceable		
SUM017	(5) Summer Hill	31.1064078, 77.1352646	01-02-2021	Serviceable		
SUM018	(5) Summer Hill	31.1066557, 77.1358606	01-02-2021	Serviceable		
SUM019	(5) Summer Hill	31.1066196, 77.136311	01-02-2021	Serviceable		
SUM020	(5) Summer Hill	31.1062144, 77.1361719	01-02-2021	Serviceable		
SUM021	(5) Summer Hill	31.1058157, 77.1362403	01-02-2021	Serviceable		
SUM022	(5) Summer Hill	31.1068242, 77.1387051	01-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
TOT001	(6) Totu	31.0970179, 77.1271991	02-02-2021	Serviceable		
TOT002	(6) Totu	31.0979452, 77.1226715	02-02-2021	Serviceable		
TOT003	(6) Totu	31.1002863, 77.120674	02-02-2021	Serviceable		
TOT004	(6) Totu	31.1018225, 77.1206143	02-02-2021	Serviceable		
TOT005	(6) Totu	31.1012383, 77.1199418	03-02-2021	Serviceable		
TOT006	(6) Totu	31.0977823, 77.1247408	03-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
BOI001	(8) Boileauganj	31.0997023, 77.1403235	02-01-2021	Unserviceable		
BOI002	(8) Boileauganj	31.0988569, 77.1387354	02-01-2021	Serviceable		
BOI003	(8) Boileauganj	31.0983849, 77.1381374	02-01-2021	Serviceable		
BOI004	(8) Boileauganj	31.099575, 77.1388991	02-01-2021	Unserviceable		
BOI005	(8) Boileauganj	31.0993929, 77.1407499	02-01-2021	Serviceable		
BOI006	(8) Boileauganj	31.0998699, 77.1407968	02-01-2021	Serviceable		
BOI007	(8) Boileauganj	31.1012289, 77.1410023	02-01-2021	Serviceable		
BOI008	(8) Boileauganj	31.1028576, 77.1437145	02-01-2021	Serviceable		
BOI009	(8) Boileauganj	31.1023545, 77.145527	28-01-2021	Serviceable		
BOI010	(8) Boileauganj	31.1026485, 77.1471613	28-01-2021	Serviceable		
BOI011	(8) Boileauganj	31.1027422, 77.1467504	28-01-2021	Serviceable		
BOI012	(8) Boileauganj	31.1030498, 77.1451708	28-01-2021	Serviceable		
BOI013	(8) Boileauganj	31.0989198, 77.1383862	28-01-2021	Serviceable		
BOI014	(8) Boileauganj	31.0984343, 77.1381148	28-01-2021	Serviceable		
BOI015	(8) Boileauganj	31.0995704, 77.1388748	28-01-2021	Unserviceable		
BOI016	(8) Boileauganj	31.0993379, 77.1408757	28-01-2021	Serviceable		
BOI017	(8) Boileauganj	31.0997998, 77.1403234	28-01-2021	Serviceable		
BOI018	(8) Boileauganj	31.0998224, 77.1408178	28-01-2021	Serviceable		
BOI019	(8) Boileauganj	31.1010902, 77.1410506	28-01-2021	Serviceable		
BOI020	(8) Boileauganj	31.1011679, 77.1410669	28-01-2021	Serviceable		
BOI021	(8) Boileauganj	31.1025022, 77.1426096	28-01-2021	Serviceable		
BOI022	(8) Boileauganj	31.1027763, 77.1445807	28-01-2021	Serviceable		
BOI023	(8) Boileauganj	31.0955116, 77.1361931	02-02-2021	Serviceable		
BOI024	(8) Boileauganj	31.0941775, 77.1348667	02-02-2021	Serviceable		
BOI025	(8) Boileauganj	31.0922196, 77.1347325	02-02-2021	Serviceable		
BOI026	(8) Boileauganj	31.0948418, 77.1354523	02-02-2021	Serviceable		
BOI027	(8) Boileauganj	31.0873303, 77.1407973	02-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
KAC001	(9) Kachi Ghati	31.0941109, 77.1369319	02-02-2021	Serviceable		
KAC002	(9) Kachi Ghati	31.0938902, 77.1382706	02-02-2021	Serviceable		
KAC003	(9) Kachi Ghati	31.093975, 77.137973	02-02-2021	Unserviceable		
KAC004	(9) Kachi Ghati	31.0917056, 77.1379602	03-02-2021	Serviceable		
KAC005	(9) Kachi Ghati	31.0969269, 77.1402243	03-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
TUT001	(10) Tutikandi	31.0953103, 77.1560096	02-02-2021	Serviceable		
TUT002	(10) Tutikandi	31.0952979, 77.1534627	02-02-2021	Serviceable		
TUT003	(10) Tutikandi	31.0955508, 77.1526059	02-02-2021	Serviceable		
TUT004	(10) Tutikandi	31.0942321, 77.1529433	02-02-2021	Serviceable		
TUT005	(10) Tutikandi	31.0960667, 77.1534846	02-02-2021	Serviceable		
TUT006	(10) Tutikandi	31.0961203, 77.1546377	03-02-2021	Serviceable		
TUT007	(10) Tutikandi	31.0947109, 77.1552551	03-02-2021	Serviceable		
TUT008	(10) Tutikandi	31.094832, 77.1529644	03-02-2021	Serviceable		
TUT009	(10) Tutikandi	31.0950727, 77.1523433	03-02-2021	Serviceable		
TUT010	(10) Tutikandi	31.0957178, 77.1542787	03-02-2021	Serviceable		
TUT011	(10) Tutikandi	31.0983824, 77.1526622	04-02-2021	Serviceable		
TUT012	(10) Tutikandi	31.1003429, 77.1516789	10-02-2021	Serviceable		
TUT013	(10) Tutikandi	31.0974382, 77.1530966	10-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
NAB001	(11) Nabha	31.1025787, 77.1580154	03-02-2021	Serviceable		
NAB002	(11) Nabha	31.1020705, 77.1589992	03-02-2021	Serviceable		
NAB003	(11) Nabha	31.1017148, 77.157589	03-02-2021	Serviceable		
NAB004	(11) Nabha	31.1008696, 77.1596799	03-02-2021	Serviceable		
NAB005	(11) Nabha	31.1020574, 77.1575503	10-02-2021	Serviceable		
NAB006	(11) Nabha	31.1016943, 77.1566339	10-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
PHA001	(12) Phagli	31.0988073, 77.1638534	02-02-2021	Serviceable		
PHA002	(12) Phagli	31.1001666, 77.1627474	02-02-2021	Serviceable		
PHA003	(12) Phagli	31.0999146, 77.1634681	02-02-2021	Unserviceable		
PHA004	(12) Phagli	31.0988992, 77.1571929	02-02-2021	Serviceable		
PHA005	(12) Phagli	31.0991245, 77.1608244	03-02-2021	Unserviceable		
PHA006	(12) Phagli	31.1002011, 77.1594506	04-02-2021	Serviceable		
PHA007	(12) Phagli	31.0998857, 77.1610788	04-02-2021	Serviceable		
PHA008	(12) Phagli	31.1007547, 77.1604062	10-02-2021	Serviceable		
PHA009	(12) Phagli	31.1003953, 77.160573	10-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
KRI001	(13) Krishna Nagar	31.1037422, 77.1689576	02-02-2021	Serviceable		
KRI002	(13) Krishna Nagar	31.1033351, 77.1688772	02-02-2021	Serviceable		
KRI003	(13) Krishna Nagar	31.1028412, 77.1686049	02-02-2021	Serviceable		
KRI004	(13) Krishna Nagar	31.1026603, 77.170487	02-02-2021	Serviceable		
KRI005	(13) Krishna Nagar	31.1040258, 77.1676886	02-02-2021	Serviceable		
KRI006	(13) Krishna Nagar	31.1030395, 77.168813	02-02-2021	Unserviceable		
KRI007	(13) Krishna Nagar	31.1023942, 77.1685253	02-02-2021	Serviceable		
KRI008	(13) Krishna Nagar	31.1028781, 77.1734602	02-02-2021	Unserviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
RAM001	(14) Ram Bazar	31.1047193, 77.1717625	01-02-2021	Serviceable		
RAM002	(14) Ram Bazar	31.1039781, 77.1713948	01-02-2021	Serviceable		
RAM003	(14) Ram Bazar	31.1045301, 77.1706063	01-02-2021	Serviceable		
RAM004	(14) Ram Bazar	31.1044385, 77.1700094	01-02-2021	Serviceable		
RAM005	(14) Ram Bazar	31.104337, 77.1696453	01-02-2021	Serviceable		
RAM006	(14) Ram Bazar	31.1043691, 77.1710792	01-02-2021	Serviceable		
RAM007	(14) Ram Bazar	31.1045744, 77.170229	01-02-2021	Serviceable		
RAM008	(14) Ram Bazar	31.1042519, 77.1705682	01-02-2021	Unserviceable		
RAM009	(14) Ram Bazar	31.104036, 77.1694175	01-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
LOW001	(15) Lower Bazar	31.1038686, 77.1752006	31-01-2021	Serviceable		
LOW002	(15) Lower Bazar	31.1038698, 77.1734387	31-01-2021	Serviceable		
LOW003	(15) Lower Bazar	31.10425, 77.1722827	31-01-2021	Unserviceable		
LOW004	(15) Lower Bazar	31.1048917, 77.1714819	31-01-2021	Serviceable		
LOW005	(15) Lower Bazar	31.1044041, 77.1731917	31-01-2021	Serviceable		
LOW006	(15) Lower Bazar	31.1041711, 77.17444	31-01-2021	Serviceable		
LOW007	(15) Lower Bazar	31.1045901, 77.1749866	31-01-2021	Serviceable		
LOW008	(15) Lower Bazar	31.1042591, 77.172223	31-01-2021	Unserviceable		
LOW009	(15) Lower Bazar	31.1036086, 77.1766187	22-01-2021	Serviceable		
LOW010	(15) Lower Bazar	31.1025503, 77.1776925	22-01-2021	Serviceable		
LOW011	(15) Lower Bazar	31.1044878, 77.1738007	21-01-2021	Serviceable		
LOW012	(15) Lower Bazar	31.1044147, 77.1741541	21-01-2021	Serviceable		
LOW013	(15) Lower Bazar	31.101984, 77.1775276	21-01-2021	Serviceable		
LOW014	(15) Lower Bazar	31.1038233, 77.1762921	21-01-2021	Serviceable		
LOW015	(15) Lower Bazar	31.1041035, 77.1755273	21-01-2021	Serviceable		
LOW016	(15) Lower Bazar	31.1042956, 77.1751797	21-01-2021	Serviceable		
LOW017	(15) Lower Bazar	31.1033179, 77.1770278	21-01-2021	Serviceable		
LOW018	(15) Lower Bazar	31.1039865, 77.1756076	21-01-2021	Serviceable		
LOW019	(15) Lower Bazar	31.1045573, 77.1729172	28-01-2021	Serviceable		
LOW020	(15) Lower Bazar	31.10431, 77.1742896	28-01-2021	Serviceable		
LOW021	(15) Lower Bazar	31.104237, 77.1752289	28-01-2021	Serviceable		
LOW022	(15) Lower Bazar	31.1039259, 77.175643	28-01-2021	Serviceable		
LOW023	(15) Lower Bazar	31.1036006, 77.1766484	28-01-2021	Serviceable		
LOW024	(15) Lower Bazar	31.1030192, 77.1773596	28-01-2021	Serviceable		
LOW025	(15) Lower Bazar	31.102524, 77.1776569	28-01-2021	Serviceable		
LOW026	(15) Lower Bazar	31.1045348, 77.1737507	28-01-2021	Serviceable		
LOW027	(15) Lower Bazar	31.1053375, 77.1722737	28-01-2021	Serviceable		
LOW028	(15) Lower Bazar	31.105366, 77.1715508	28-01-2021	Serviceable		
LOW029	(15) Lower Bazar	31.1055438, 77.1708909	28-01-2021	Serviceable		
LOW030	(15) Lower Bazar	31.1044905, 77.174222	28-01-2021	Serviceable		
LOW031	(15) Lower Bazar	31.1044719, 77.1747573	28-01-2021	Serviceable		
LOW032	(15) Lower Bazar	31.1040433, 77.1755123	28-01-2021	Serviceable		
LOW033	(15) Lower Bazar	31.1037755, 77.1762849	28-01-2021	Serviceable		

LOW034	(15) Lower Bazar	31.1033232, 77.176913	28-01-2021	Serviceable		
LOW035	(15) Lower Bazar	31.1027463, 77.1775583	28-01-2021	Serviceable		
LOW036	(15) Lower Bazar	31.1016378, 77.177108	28-01-2021	Serviceable		
LOW037	(15) Lower Bazar	31.1045774, 77.1731687	28-01-2021	Serviceable		
LOW038	(15) Lower Bazar	31.1053767, 77.1717549	28-01-2021	Serviceable		
LOW039	(15) Lower Bazar	31.1053091, 77.1713586	28-01-2021	Serviceable		
LOW040	(15) Lower Bazar	31.104344, 77.1741902	28-01-2021	Serviceable		
LOW041	(15) Lower Bazar	31.1055658, 77.1700161	30-01-2021	Serviceable		
LOW042	(15) Lower Bazar	31.1058647, 77.1692907	30-01-2021	Serviceable		
LOW043	(15) Lower Bazar	31.1057462, 77.1661894	30-01-2021	Serviceable		
LOW044	(15) Lower Bazar	31.1055787, 77.1653956	30-01-2021	Serviceable		
LOW045	(15) Lower Bazar	31.1044458, 77.1620759	30-01-2021	Serviceable		
LOW046	(15) Lower Bazar	31.1059361, 77.1673819	30-01-2021	Unserviceable		
LOW047	(15) Lower Bazar	31.1073472, 77.1666521	30-01-2021	Serviceable		
LOW048	(15) Lower Bazar	31.106661, 77.1663666	30-01-2021	Serviceable		
LOW049	(15) Lower Bazar	31.1058017, 77.1701956	30-01-2021	Unserviceable		
LOW050	(15) Lower Bazar	31.1058207, 77.1702066	30-01-2021	Unserviceable		
LOW051	(15) Lower Bazar	31.1054211, 77.1714966	30-01-2021	Serviceable		
LOW052	(15) Lower Bazar	31.1054463, 77.170439	30-01-2021	Serviceable		
LOW053	(15) Lower Bazar	31.1057094, 77.1699615	30-01-2021	Unserviceable		
LOW054	(15) Lower Bazar	31.105809, 77.1692728	30-01-2021	Serviceable		
LOW055	(15) Lower Bazar	31.1054528, 77.1650392	30-01-2021	Serviceable		
LOW056	(15) Lower Bazar	31.1054025, 77.1649692	30-01-2021	Serviceable		
LOW057	(15) Lower Bazar	31.1051516, 77.1632361	30-01-2021	Serviceable		
LOW058	(15) Lower Bazar	31.1059744, 77.1682363	30-01-2021	Serviceable		
LOW059	(15) Lower Bazar	31.1055169, 77.1663362	30-01-2021	Serviceable		
LOW060	(15) Lower Bazar	31.1061466, 77.1670235	30-01-2021	Serviceable		
LOW061	(15) Lower Bazar	31.1061123, 77.1689996	30-01-2021	Serviceable		
LOW062	(15) Lower Bazar	31.1053183, 77.1723231	30-01-2021	Serviceable		
LOW063	(15) Lower Bazar	31.1041118, 77.17459	31-01-2021	Serviceable		
LOW064	(15) Lower Bazar	31.1042719, 77.1737628	31-01-2021	Unserviceable		
LOW065	(15) Lower Bazar	31.1045545, 77.1725889	31-01-2021	Serviceable		
LOW066	(15) Lower Bazar	31.1050768, 77.1711927	31-01-2021	Serviceable		
LOW067	(15) Lower Bazar	31.1040296, 77.172892	31-01-2021	Unserviceable		
LOW068	(15) Lower Bazar	31.1038611, 77.1739425	31-01-2021	Serviceable		
LOW069	(15) Lower Bazar	31.104011, 77.174471	31-01-2021	Serviceable		
LOW070	(15) Lower Bazar	31.1049807, 77.1760922	31-01-2021	Serviceable		
LOW071	(15) Lower Bazar	31.1044405, 77.1755916	31-01-2021	Serviceable		
LOW072	(15) Lower Bazar	31.1042349, 77.1738357	31-01-2021	Serviceable		
LOW073	(15) Lower Bazar	31.1042666, 77.1729264	31-01-2021	Serviceable		
LOW074	(15) Lower Bazar	31.1052468, 77.1707564	31-01-2021	Serviceable		
LOW075	(15) Lower Bazar	31.1046942, 77.1718668	01-02-2021	Serviceable		
LOW076	(15) Lower Bazar	31.103955, 77.1724957	01-02-2021	Serviceable		
LOW077	(15) Lower Bazar	31.1040792, 77.1731998	01-02-2021	Serviceable		
LOW078	(15) Lower Bazar	31.1036528, 77.1755931	01-02-2021	Serviceable		
LOW079	(15) Lower Bazar	31.1035309, 77.1762621	01-02-2021	Serviceable		

LOW080	(15) Lower Bazar	31.1034541, 77.1755679	01-02-2021	Serviceable		
LOW081	(15) Lower Bazar	31.1027408, 77.1767663	01-02-2021	Serviceable		
LOW082	(15) Lower Bazar	31.1035683, 77.1746555	01-02-2021	Unserviceable		
LOW083	(15) Lower Bazar	31.1032201, 77.1740735	01-02-2021	Serviceable		
LOW084	(15) Lower Bazar	31.1032271, 77.1722426	01-02-2021	Unserviceable		
LOW085	(15) Lower Bazar	31.1037031, 77.1734898	01-02-2021	Serviceable		
LOW086	(15) Lower Bazar	31.1032463, 77.1761234	01-02-2021	Serviceable		
LOW087	(15) Lower Bazar	31.102643, 77.1749495	01-02-2021	Unserviceable		
LOW088	(15) Lower Bazar	31.1034416, 77.1736469	01-02-2021	Serviceable		
LOW089	(15) Lower Bazar	31.1033513, 77.1730886	01-02-2021	Unserviceable		
LOW090	(15) Lower Bazar	31.1037795, 77.1724355	01-02-2021	Serviceable		
LOW091	(15) Lower Bazar	31.1060714, 77.1694859	07-02-2021	Serviceable		
LOW092	(15) Lower Bazar	31.1053314, 77.1657707	09-02-2021	Serviceable		

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JAK001	(16) Jakhu	31.1040462, 77.1766083	15-02-2021	Serviceable		
JAK002	(16) Jakhu	31.1029568, 77.1788403	15-02-2021	Serviceable		
JAK003	(16) Jakhu	31.103373, 77.1782953	15-02-2021	Serviceable		
JAK004	(16) Jakhu	31.1040786, 77.1776815	15-02-2021	Serviceable		
JAK005	(16) Jakhu	31.1048274, 77.1773795	15-02-2021	Serviceable		
JAK006	(16) Jakhu	31.1060235, 77.1790083	15-02-2021	Serviceable		
JAK007	(16) Jakhu	31.1044773, 77.1798443	15-02-2021	Unserviceable		
JAK008	(16) Jakhu	31.1034211, 77.1813604	15-02-2021	Serviceable		
JAK009	(16) Jakhu	31.1028668, 77.1815613	15-02-2021	Serviceable		
JAK010	(16) Jakhu	31.1031379, 77.1800895	15-02-2021	Serviceable		
JAK011	(16) Jakhu	31.1041207, 77.1795168	15-02-2021	Serviceable		
JAK012	(16) Jakhu	31.1042615, 77.1786349	15-02-2021	Unserviceable		
JAK013	(16) Jakhu	31.1018441, 77.1808413	15-02-2021	Serviceable		
JAK014	(16) Jakhu	31.10021, 77.1777587	15-02-2021	Unserviceable		
JAK015	(16) Jakhu	31.0998246, 77.1775792	15-02-2021	Serviceable		
JAK016	(16) Jakhu	31.0990997, 77.1770483	15-02-2021	Serviceable		
JAK017	(16) Jakhu	31.1004767, 77.1771347	15-02-2021	Serviceable		
JAK018	(16) Jakhu	31.1010742, 77.1775612	15-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
BEN001	(17) Benmore	31.098273, 77.1781646	03-02-2021	Serviceable		
BEN002	(17) Benmore	31.0970188, 77.1785658	03-02-2021	Unserviceable		
BEN003	(17) Benmore	31.0958351, 77.1776373	03-02-2021	Serviceable		
BEN004	(17) Benmore	31.0954966, 77.1770814	03-02-2021	Unserviceable		
BEN005	(17) Benmore	31.0925979, 77.1792196	03-02-2021	Serviceable		
BEN006	(17) Benmore	31.0947151, 77.1789526	03-02-2021	Serviceable		
BEN007	(17) Benmore	31.0949041, 77.1788377	03-02-2021	Unserviceable		
BEN008	(17) Benmore	31.0962553, 77.1796796	03-02-2021	Unserviceable		
BEN009	(17) Benmore	31.0972716, 77.1813608	03-02-2021	Serviceable		
BEN010	(17) Benmore	31.0988509, 77.1856458	03-02-2021	Unserviceable		
BEN011	(17) Benmore	31.1009762, 77.1856186	03-02-2021	Unserviceable		
BEN012	(17) Benmore	31.0989836, 77.1816982	03-02-2021	Serviceable		
BEN013	(17) Benmore	31.0950342, 77.1775439	03-02-2021	Serviceable		
BEN014	(17) Benmore	31.0938551, 77.178751	03-02-2021	Unserviceable		
BEN015	(17) Benmore	31.0937729, 77.1800033	03-02-2021	Unserviceable		
BEN016	(17) Benmore	31.0953921, 77.1786739	03-02-2021	Serviceable		
BEN017	(17) Benmore	31.099195, 77.1780942	03-02-2021	Unserviceable		
BEN018	(17) Benmore	31.103106, 77.1903622	06-02-2021	Serviceable		

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SAN001	(19) Sanjauli Chowk	31.105298, 77.1927602	06-02-2021	Serviceable		
SAN002	(19) Sanjauli Chowk	31.1018088, 77.1912245	06-02-2021	Serviceable		
SAN003	(19) Sanjauli Chowk	31.095262, 77.1872346	06-02-2021	Serviceable		
SAN004	(19) Sanjauli Chowk	31.1062023, 77.1884881	08-02-2021	Serviceable		
SAN005	(19) Sanjauli Chowk	31.1057275, 77.1868046	08-02-2021	Serviceable		
SAN006	(19) Sanjauli Chowk	31.1033469, 77.1910018	08-02-2021	Serviceable		
SAN007	(19) Sanjauli Chowk	31.104864, 77.1934042	08-02-2021	Serviceable		
SAN008	(19) Sanjauli Chowk	31.1019307, 77.1912847	08-02-2021	Serviceable		
SAN009	(19) Sanjauli Chowk	31.1019619, 77.1906723	08-02-2021	Serviceable		
SAN010	(19) Sanjauli Chowk	31.1051215, 77.1967467	10-02-2021	Serviceable		
SAN011	(19) Sanjauli Chowk	31.1013184, 77.191051	10-02-2021	Serviceable		
SAN012	(19) Sanjauli Chowk	31.1048166, 77.1934516	10-02-2021	Serviceable		
SAN013	(19) Sanjauli Chowk	31.103585, 77.194475	10-02-2021	Serviceable		
SAN014	(19) Sanjauli Chowk	31.103627, 77.1951424	10-02-2021	Serviceable		
SAN015	(19) Sanjauli Chowk	31.100287, 77.1933413	10-02-2021	Unserviceable		
SAN016	(19) Sanjauli Chowk	31.1000015, 77.1938113	10-02-2021	Serviceable		
SAN017	(19) Sanjauli Chowk	31.1027263, 77.1972947	10-02-2021	Serviceable		
SAN018	(19) Sanjauli Chowk	31.1065648, 77.1885423	11-02-2021	Serviceable		
SAN019	(19) Sanjauli Chowk	31.1058551, 77.1873475	11-02-2021	Unserviceable		
SAN020	(19) Sanjauli Chowk	31.105644, 77.1869565	11-02-2021	Serviceable		
SAN021	(19) Sanjauli Chowk	31.1056658, 77.1864797	11-02-2021	Serviceable		
SAN022	(19) Sanjauli Chowk	31.1039338, 77.1929757	11-02-2021	Serviceable		
SAN023	(19) Sanjauli Chowk	31.1026182, 77.1911978	11-02-2021	Serviceable		
SAN024	(19) Sanjauli Chowk	31.1014646, 77.1902944	11-02-2021	Serviceable		
SAN025	(19) Sanjauli Chowk	31.1000911, 77.1886041	11-02-2021	Serviceable		
SAN026	(19) Sanjauli Chowk	31.0946739, 77.1872337	11-02-2021	Unserviceable		
SAN027	(19) Sanjauli Chowk	31.1036816, 77.1958876	15-02-2021	Serviceable		
SAN028	(19) Sanjauli Chowk	31.103389, 77.1979574	15-02-2021	Serviceable		
SAN029	(19) Sanjauli Chowk	31.1032356, 77.2013687	15-02-2021	Serviceable		
SAN030	(19) Sanjauli Chowk	31.1038984, 77.2012849	15-02-2021	Serviceable		
SAN031	(19) Sanjauli Chowk	31.1046386, 77.2002351	15-02-2021	Serviceable		
SAN032	(19) Sanjauli Chowk	31.1069383, 77.1990284	15-02-2021	Serviceable		
SAN033	(19) Sanjauli Chowk	31.1010701, 77.1930479	15-02-2021	Serviceable		
SAN034	(19) Sanjauli Chowk	31.1018025, 77.192587	15-02-2021	Serviceable		
SAN035	(19) Sanjauli Chowk	31.1025832, 77.1925439	15-02-2021	Serviceable		

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DHA001	(20) Dhalli	31.1049521, 77.2054496	10-02-2021	Serviceable		
DHA002	(20) Dhalli	31.1075456, 77.2117756	10-02-2021	Serviceable		
DHA003	(20) Dhalli	31.1172454, 77.2182872	10-02-2021	Unserviceable		
DHA004	(20) Dhalli	31.1174558, 77.2179223	10-02-2021	Unserviceable		
DHA005	(20) Dhalli	31.1041563, 77.202542	15-02-2021	Serviceable		
DHA006	(20) Dhalli	31.1084042, 77.2133577	15-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
SAG001	(24) Sangti	31.0908289, 77.1892934	08-02-2021	Serviceable		
SAG002	(24) Sangti	31.0909142, 77.1902342	11-02-2021	Serviceable		

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KAS001	(27) Kasumpti	31.0732598, 77.184434	29-01-2021	Unserviceable		
KAS002	(27) Kasumpti	31.0793879, 77.1809144	29-01-2021	Unserviceable		
KAS003	(27) Kasumpti	31.0782317, 77.1830683	29-01-2021	Unserviceable		
KAS004	(27) Kasumpti	31.0713334, 77.1890443	29-01-2021	Serviceable		
KAS005	(27) Kasumpti	31.0716467, 77.1878999	29-01-2021	Unserviceable		
KAS006	(27) Kasumpti	31.0819882, 77.1822005	29-01-2021	Serviceable		
KAS007	(27) Kasumpti	31.0807951, 77.1824238	29-01-2021	Unserviceable		
KAS008	(27) Kasumpti	31.0792362, 77.1829149	29-01-2021	Unserviceable		
KAS009	(27) Kasumpti	31.0787619, 77.1809223	29-01-2021	Unserviceable		
KAS010	(27) Kasumpti	31.079325, 77.1815367	29-01-2021	Serviceable		
KAS011	(27) Kasumpti	31.07857, 77.182395	29-01-2021	Unserviceable		
KAS012	(27) Kasumpti	31.0761084, 77.1839551	29-01-2021	Serviceable		
KAS013	(27) Kasumpti	31.0762455, 77.183436	29-01-2021	Unserviceable		
KAS014	(27) Kasumpti	31.0724093, 77.1856787	29-01-2021	Serviceable		
KAS015	(27) Kasumpti	31.0716735, 77.1869652	29-01-2021	Unserviceable		
KAS016	(27) Kasumpti	31.0722044, 77.1827053	29-01-2021	Unserviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
CHH001	(28) Chhota Shimla	31.0875802, 77.1806205	31-01-2021	Unserviceable		
CHH002	(28) Chhota Shimla	31.0891841, 77.1795154	31-01-2021	Unserviceable		
CHH003	(28) Chhota Shimla	31.0861819, 77.1818655	29-01-2021	Serviceable		
CHH004	(28) Chhota Shimla	31.0972049, 77.1771224	31-01-2021	Serviceable		
CHH005	(28) Chhota Shimla	31.0946754, 77.1763293	31-01-2021	Serviceable		
CHH006	(28) Chhota Shimla	31.0952863, 77.1762606	31-01-2021	Serviceable		
CHH007	(28) Chhota Shimla	31.0964979, 77.1767147	31-01-2021	Unserviceable		
CHH008	(28) Chhota Shimla	31.0955743, 77.1756883	31-01-2021	Unserviceable		
CHH009	(28) Chhota Shimla	31.0921393, 77.1772141	31-01-2021	Unserviceable		
CHH010	(28) Chhota Shimla	31.0917533, 77.1770488	31-01-2021	Serviceable		
CHH011	(28) Chhota Shimla	31.0912567, 77.1771527	31-01-2021	Unserviceable		
CHH012	(28) Chhota Shimla	31.0865878, 77.1823102	29-01-2021	Serviceable		
CHH013	(28) Chhota Shimla	31.0826481, 77.1817581	29-01-2021	Unserviceable		
CHH014	(28) Chhota Shimla	31.0831507, 77.1829082	29-01-2021	Serviceable		
CHH015	(28) Chhota Shimla	31.0831343, 77.1824917	29-01-2021	Serviceable		
CHH016	(28) Chhota Shimla	31.0855943, 77.1811847	28-01-2021	Serviceable		
CHH017	(28) Chhota Shimla	31.0847302, 77.1811146	28-01-2021	Unserviceable		
CHH018	(28) Chhota Shimla	31.0837079, 77.1822728	28-01-2021	Unserviceable		
CHH019	(28) Chhota Shimla	31.0832753, 77.1825067	28-01-2021	Serviceable		
CHH020	(28) Chhota Shimla	31.088222, 77.179795	29-01-2021	Unserviceable		
CHH021	(28) Chhota Shimla	31.087622, 77.1803597	29-01-2021	Unserviceable		
CHH022	(28) Chhota Shimla	31.086314, 77.1810401	29-01-2021	Unserviceable		
CHH023	(28) Chhota Shimla	31.0840518, 77.1811163	29-01-2021	Serviceable		
CHH024	(28) Chhota Shimla	31.0938529, 77.1770701	31-01-2021	Serviceable		
CHH025	(28) Chhota Shimla	31.0930233, 77.1775549	31-01-2021	Serviceable		
CHH026	(28) Chhota Shimla	31.0926953, 77.177561	31-01-2021	Unserviceable		
CHH027	(28) Chhota Shimla	31.0906173, 77.1778115	31-01-2021	Serviceable		
CHH028	(28) Chhota Shimla	31.0902601, 77.1782355	31-01-2021	Serviceable		
CHH029	(28) Chhota Shimla	31.0900362, 77.1785704	31-01-2021	Unserviceable		
CHH030	(28) Chhota Shimla	31.0896135, 77.1790367	31-01-2021	Serviceable		
CHH031	(28) Chhota Shimla	31.0879956, 77.1803999	31-01-2021	Serviceable		
CHH032	(28) Chhota Shimla	31.0889139, 77.1800488	31-01-2021	Unserviceable		
CHH033	(28) Chhota Shimla	31.0873638, 77.1792299	31-01-2021	Unserviceable		
CHH034	(28) Chhota Shimla	31.0878697, 77.1791214	01-02-2021	Unserviceable		
CHH035	(28) Chhota Shimla	31.0871087, 77.1788496	01-02-2021	Serviceable		
CHH036	(28) Chhota Shimla	31.0882766, 77.1800411	01-02-2021	Serviceable		
CHH037	(28) Chhota Shimla	31.0878201, 77.1809049	01-02-2021	Serviceable		
CHH038	(28) Chhota Shimla	31.0893624, 77.180861	01-02-2021	Serviceable		
CHH039	(28) Chhota Shimla	31.0892821, 77.1817362	01-02-2021	Serviceable		
CHH040	(28) Chhota Shimla	31.0897736, 77.1809618	01-02-2021	Serviceable		
CHH041	(28) Chhota Shimla	31.0868221, 77.1812635	01-02-2021	Serviceable		
CHH042	(28) Chhota Shimla	31.0871867, 77.1812509	01-02-2021	Serviceable		
CHH043	(28) Chhota Shimla	31.0872079, 77.1812235	01-02-2021	Serviceable		
CHH044	(28) Chhota Shimla	31.0875706, 77.1807919	01-02-2021	Serviceable		
CHH045	(28) Chhota Shimla	31.0886922, 77.1773317	01-02-2021	Serviceable		
CHH046	(28) Chhota Shimla	31.0883401, 77.177208	01-02-2021	Unserviceable		

CHH047	(28) Chhota Shimla	31.0900365, 77.1757183	01-02-2021	Serviceable		
CHH048	(28) Chhota Shimla	31.0901512, 77.17467	01-02-2021	Serviceable		
CHH049	(28) Chhota Shimla	31.0891357, 77.1769653	01-02-2021	Unserviceable		
CHH050	(28) Chhota Shimla	31.0894183, 77.1766282	01-02-2021	Unserviceable		
CHH051	(28) Chhota Shimla	31.0902839, 77.1748491	01-02-2021	Unserviceable		
CHH052	(28) Chhota Shimla	31.0856303, 77.179797	02-02-2021	Serviceable		
CHH053	(28) Chhota Shimla	31.0873335, 77.1798324	02-02-2021	Unserviceable		
CHH054	(28) Chhota Shimla	31.0886478, 77.1797711	02-02-2021	Serviceable		
CHH055	(28) Chhota Shimla	31.0894631, 77.1806683	02-02-2021	Serviceable		
CHH056	(28) Chhota Shimla	31.0890775, 77.1811391	02-02-2021	Serviceable		
CHH057	(28) Chhota Shimla	31.0895797, 77.1809395	02-02-2021	Serviceable		
CHH058	(28) Chhota Shimla	31.0871118, 77.1806284	02-02-2021	Serviceable		
CHH059	(28) Chhota Shimla	31.0866848, 77.1811337	02-02-2021	Serviceable		
CHH060	(28) Chhota Shimla	31.0865217, 77.1812349	02-02-2021	Unserviceable		
CHH061	(28) Chhota Shimla	31.0868427, 77.1810984	02-02-2021	Serviceable		
CHH062	(28) Chhota Shimla	31.0870563, 77.1812531	02-02-2021	Serviceable		
CHH063	(28) Chhota Shimla	31.0873975, 77.1807086	02-02-2021	Serviceable		
CHH064	(28) Chhota Shimla	31.0862562, 77.1810046	03-02-2021	Unserviceable		
CHH065	(28) Chhota Shimla	31.091863, 77.1902078	08-02-2021	Serviceable		
CHH066	(28) Chhota Shimla	31.0994035, 77.1746641	20-02-2021	Serviceable		
CHH067	(28) Chhota Shimla	31.0995707, 77.174546	20-02-2021	Serviceable		
CHH068	(28) Chhota Shimla	31.0995626, 77.1744575	20-02-2021	Serviceable		
CHH069	(28) Chhota Shimla	31.0988867, 77.17516	20-02-2021	Serviceable		
CHH070	(28) Chhota Shimla	31.1029744, 77.1743879	20-02-2021	Serviceable		
CHH071	(28) Chhota Shimla	31.1031457, 77.1738945	20-02-2021	Serviceable		
CHH072	(28) Chhota Shimla	31.098885, 77.175165	20-02-2021	Serviceable		
CHH073	(28) Chhota Shimla	31.0988207, 77.175067	20-02-2021	Serviceable		
CHH074	(28) Chhota Shimla	31.0989383, 77.1750883	20-02-2021	Serviceable		
CHH075	(28) Chhota Shimla	31.0989533, 77.175105	20-02-2021	Serviceable		
CHH076	(28) Chhota Shimla	31.0989617, 77.17511	20-02-2021	Serviceable		
CHH077	(28) Chhota Shimla	31.0988873, 77.1748436	20-02-2021	Serviceable		
CHH078	(28) Chhota Shimla	31.0982875, 77.1752804	20-02-2021	Serviceable		
CHH079	(28) Chhota Shimla	31.0993934, 77.1742375	20-02-2021	Serviceable		
CHH080	(28) Chhota Shimla	31.099721, 77.174001	20-02-2021	Serviceable		
CHH081	(28) Chhota Shimla	31.09935, 77.1748956	20-02-2021	Serviceable		
CHH082	(28) Chhota Shimla	31.0993197, 77.174893	20-02-2021	Serviceable		
CHH083	(28) Chhota Shimla	31.0989325, 77.1747948	20-02-2021	Serviceable		
CHH084	(28) Chhota Shimla	31.0993173, 77.1749248	20-02-2021	Serviceable		
CHH085	(28) Chhota Shimla	31.0993025, 77.1748916	20-02-2021	Serviceable		
CHH086	(28) Chhota Shimla	31.0988589, 77.1753227	20-02-2021	Serviceable		
CHH087	(28) Chhota Shimla	31.0990542, 77.1749783	20-02-2021	Serviceable		
CHH088	(28) Chhota Shimla	31.099016, 77.1749205	20-02-2021	Serviceable		
CHH089	(28) Chhota Shimla	31.0990022, 77.1749189	20-02-2021	Serviceable		
CHH090	(28) Chhota Shimla	31.0987785, 77.1749012	20-02-2021	Serviceable		
CHH091	(28) Chhota Shimla	31.0989689, 77.1747346	20-02-2021	Serviceable		
CHH092	(28) Chhota Shimla	31.0913613, 77.1779132	20-02-2021	Unserviceable		
CHH093	(28) Chhota Shimla	31.0989558, 77.1753015	20-02-2021	Serviceable		

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KHA001	(33) Khalini	31.0856072, 77.173438	30-01-2021	Unserviceable		
KHA002	(33) Khalini	31.0853034, 77.1729823	30-01-2021	Unserviceable		
KHA003	(33) Khalini	31.0846562, 77.1737988	30-01-2021	Unserviceable		
KHA004	(33) Khalini	31.0850333, 77.174212	30-01-2021	Serviceable		
KHA005	(33) Khalini	31.0906402, 77.1736696	01-02-2021	Serviceable		
KHA006	(33) Khalini	31.090164, 77.1728408	01-02-2021	Unserviceable		
KHA007	(33) Khalini	31.0908334, 77.173012	01-02-2021	Serviceable		
KHA008	(33) Khalini	31.0898688, 77.1727094	01-02-2021	Unserviceable		
KHA009	(33) Khalini	31.088933, 77.1679698	01-02-2021	Unserviceable		
KHA010	(33) Khalini	31.0902338, 77.1738029	01-02-2021	Serviceable		
KHA011	(33) Khalini	31.0908633, 77.1740775	01-02-2021	Unserviceable		
KHA012	(33) Khalini	31.0904171, 77.1720867	01-02-2021	Serviceable		
KHA013	(33) Khalini	31.0899273, 77.1703875	01-02-2021	Unserviceable		
KHA014	(33) Khalini	31.0895176, 77.1696238	01-02-2021	Unserviceable		
KHA015	(33) Khalini	31.0892792, 77.1692614	01-02-2021	Serviceable		
KHA016	(33) Khalini	31.088763, 77.1672902	01-02-2021	Serviceable		

FH-UID	Ward	GPS Coordinates	Date	Status	Date	Status
KAN001	(34) Kanlog	31.0983769, 77.1763971	31-01-2021	Serviceable		
KAN002	(34) Kanlog	31.0984326, 77.1764233	31-01-2021	Serviceable		
KAN003	(34) Kanlog	31.0992714, 77.1757367	31-01-2021	Serviceable		
KAN004	(34) Kanlog	31.0989161, 77.1750253	31-01-2021	Serviceable		
KAN005	(34) Kanlog	31.0992137, 77.1750541	31-01-2021	Serviceable		
KAN006	(34) Kanlog	31.0993868, 77.1752868	31-01-2021	Unserviceable		
KAN007	(34) Kanlog	31.0989945, 77.1755739	31-01-2021	Serviceable		
KAN008	(34) Kanlog	31.0987143, 77.1755743	31-01-2021	Serviceable		
KAN009	(34) Kanlog	31.0934557, 77.1685036	01-02-2021	Serviceable		
KAN010	(34) Kanlog	31.096297, 77.1706426	01-02-2021	Unserviceable		
KAN011	(34) Kanlog	31.0965507, 77.1713814	01-02-2021	Unserviceable		
KAN012	(34) Kanlog	31.0950742, 77.1714132	01-02-2021	Serviceable		
KAN013	(34) Kanlog	31.0946334, 77.1716319	01-02-2021	Serviceable		
KAN014	(34) Kanlog	31.0949406, 77.1735819	01-02-2021	Serviceable		
KAN015	(34) Kanlog	31.0935205, 77.1679553	01-02-2021	Serviceable		
KAN016	(34) Kanlog	31.0938191, 77.1674135	01-02-2021	Serviceable		
KAN017	(34) Kanlog	31.0939758, 77.1695802	01-02-2021	Unserviceable		
KAN018	(34) Kanlog	31.0958958, 77.1705827	01-02-2021	Unserviceable		
KAN019	(34) Kanlog	31.096863, 77.171396	01-02-2021	Unserviceable		
KAN020	(34) Kanlog	31.0971778, 77.1721888	01-02-2021	Serviceable		
KAN021	(34) Kanlog	31.0957669, 77.1727939	01-02-2021	Unserviceable		
KAN022	(34) Kanlog	31.0934233, 77.1737564	01-02-2021	Unserviceable		
KAN023	(34) Kanlog	31.0966594, 77.174228	03-02-2021	Serviceable		
KAN024	(34) Kanlog	31.0968795, 77.1755793	03-02-2021	Serviceable		
KAN025	(34) Kanlog	31.0964923, 77.1752119	03-02-2021	Serviceable		
KAN026	(34) Kanlog	31.0960716, 77.1737875	03-02-2021	Serviceable		
KAN027	(34) Kanlog	31.0989137, 77.1727784	03-02-2021	Unserviceable		
KAN028	(34) Kanlog	31.0977797, 77.1745889	03-02-2021	Unserviceable		
KAN029	(34) Kanlog	31.0974154, 77.1769304	03-02-2021	Unserviceable		
KAN030	(34) Kanlog	31.0967635, 77.1755824	03-02-2021	Serviceable		
KAN031	(34) Kanlog	31.0966385, 77.174707	03-02-2021	Serviceable		
KAN032	(34) Kanlog	31.0966654, 77.174419	03-02-2021	Serviceable		
KAN033	(34) Kanlog	31.0966562, 77.1748163	03-02-2021	Serviceable		
KAN034	(34) Kanlog	31.0965004, 77.1756355	03-02-2021	Serviceable		
KAN035	(34) Kanlog	31.0965619, 77.1752954	03-02-2021	Serviceable		
KAN036	(34) Kanlog	31.0968224, 77.1736771	03-02-2021	Unserviceable		
KAN037	(34) Kanlog	31.0993449, 77.1740005	03-02-2021	Serviceable		
KAN038	(34) Kanlog	31.0989137, 77.1727784	03-02-2021	Unserviceable		

Annexure- 04 : Fire-related Critical Facilities & Resources

List of Petroleum Filling Station in Shimla City

S. #	Name of the Filling Station	Address	Ward	Phone No.	Contact person	Mobile No.	Petrol Storage	Diesel Storage
1.	HP State Corporation M&C Federation (HIMFED)	Chhota Shimla, 171002	(28) Chhota Shimla	01772623227	Bhupinder Deshta	7807233129 9816353058	35000	15000
2.	D.D. Mehta Petrol Pump	Sanjauli, 171006	(19) Sanjauli Chowk	01772842021	Jagir Singh	9418333409 9805598960	40000	15000
3.	The Kailash Dist. Coop. Indian Oil Petrol Pump	Dhalli, 171012	(20) Dhalli	01772841511	Bhag Chand Chatra	9418587182 9736169527	15000	15000
4.	HP Autocade	Vikas Nagar, 171009	(29) Vikas Nagar	01772628005	Surender Singh	9418255001 7018176696	22000	38000
5.	Swaraj Filling Station	171006	(25) Malyana	-	Pyare Mohan	9816363115 9816781231	20000	40000
6.	HRTC Dhalli Regional Workshop	171012	(20) Dhalli	01772647295	Dewashi Negi	9418000548 9805915018	-	45000
7.	Ramsevak	171012	(20) Dhalli	01772645065	Rajender Singh	9418963956 9857555666	32000	38000
8.	Anup Service Station	Mythe Estate Shimla, 171003	(3) Kaithu	-	Bal Krishna Verma	9418062006 8580886023	-	-
9.	H.P. Speedways	Hira Nagar, Jablog, 171011	(6) Totu	01772775039	Karam Chand	9882212678 9882428620	25000	31000
10.	Pine View Filling Station	Old Motor Barrier, 171005	(8) Boileauganj	01772830256	Devender Bhandari	9459556887 8894340045	16500	22500
11.	Himachal Filling Station, Dhalli	Dhalli, 171012	(20) Dhalli	01772841274	Tirlok Singh	9816983988 9817730981	20000	40000

List of the LPG Agencies in Shimla City

S. #	Name of the LPG Dealer/Godown	Address	Ward	Phone No.	Contact Person	Mobile No.	Storage Capacity
1.	HPSCSC Ltd.	Shogi, 171219	-	01772860361	Chiranji Lal Shyam	9816450788	563
2.	Shiva Gas Agency	Chhota Shimla, 171002	(28) Chhota Shimla	01772624633	Kashmir Singh	9218500167, 9459325571	6440
3.	Best Gas Agency	The Mall, 171001	(15) Lower Bazar	01772652574	Adarsh Kumar	9418000027, 9418600045	6000
4.	Vineet Gas Agency	Lakkar Bazar, 171001	(34) Kanlog	-	Falguni Tomar	9318533265, 9318757491	12000
5.	Himalayan Gas Agency	Lakkar Bazar, 171001	(2) Ruldu Bhatta	01772655128	Raghunandan Choudhary	9218500156, 2658851000	4978
6.	Arti Gas Agency	Totu, 171011	(6) Totu	01772830615	Brij Kishor Puri	9218500118, 9882019475	8000
7.	Durga Gas Agency	Sanjauli, 171006	(2) Sanjauli Chowk	01772842273	Gopal Verma	9418647101, 9816653300	500
8.	Uttam Gas Agency	BCS, 171009	(32) New Shimla	01772673600	Manoj Sharma	9625380008, 9817070871	600
9.	HPSCSC Ltd.	Bhatta Kuffar, 171006	(23) Bhatta Kuffar	01772843987	Avinash	9817355210, 9418209345	8000

List of the Kerosene Wholesale Dealers in Shimla City

S. #	Name of the Kerosene Dealer	Address	Ward	Phone No.	Contact Person	Mobile No.	Storage Capacity
1.	Krishna Coal Company	Shimla, 171001	(14) Ram Bazar	01772657632	Gopal Krishan	9816362789	24000
2.	Jagdamba Oil Company	Motor Barrier, Shimla	(4) Annadale	01772837666	Tek Chand Sharma	9817385006, 9416669900	-
3.	Gaindamal Hemraj	The Mall, 171001	(15) Lower Bazar	01772806624	Dinesh	7832078762, 8307805223	-
4.	Swadeshi Enterprises	Dhalli, Shimla	(20) Dhalli	01772647523	-	9816802505, 8219870916	-

Annexure- 05

Heritage Buildings in Shimla City

S. #	Name of the Heritage Building	Address	Ward	GPS Coordinates
1.	Aira Holme	Near Ankur Day School, Chotta Shimla	(27) Kasumpti	31.0799237, 77.1820888
2.	Armsdell	HP Secretariate, Chhota Shimla	(28) Chhota Shimla	31.0876205, 77.1808757
3.	Auckland House School	Elysium Hill, Near Lakkar Bazar	(1) Bharari	31.1102217, 77.1789809
4.	Band Stand	Ashiana Restaurant, The Ridge	(16) Jakhu	31.1047894, 77.174229
5.	Bantony Castle	Near Grand Hotel	(15) Lower Bazar	31.1060403, 77.1698032
6.	Barnes' Court	Raj Bhawan, Chhota Shimla	(17) Benmore	31.0899975, 77.1800606
7.	Bemloe Cottage	Nirankari Bhawan, Bemloe	(1) Bharari	31.0979252, 77.1737707
8.	Benmore House	Raj Bhawan Road, Chhota Shimla	(17) Benmore	31.092902, 77.1781475
9.	Bishop Cotton School	BCS, Bye Pass Road	(32) New Shimla	31.0832033, 77.1728783
10.	Carton House	Simla Sanitorium & Hospital, Chaura Maidan	(4) Annadale	31.1032972, 77.1558165
11.	Central Telegraph Office	The Mall	(2) Ruldu Bhatta	31.1052733, 77.1706424
12.	Chapslee	Elysium Hill, Near Lakkar Bazar	(1) Bharari	31.10882, 77.179065
13.	Christ Church	The Ridge	(16) Jakhu	31.1042802, 77.1760054
14.	Clermont	Chaura Maidan Road	-	-
15.	Convent of Jesus & Mary	Navbahar	(28) Chhota Shimla	31.0943615, 77.1874704
16.	Corner House	Near Medical Hostel Sanjauli	(17) Benmore	31.1035312, 77.1918429
17.	Craig Gardens	Mashobra	-	-

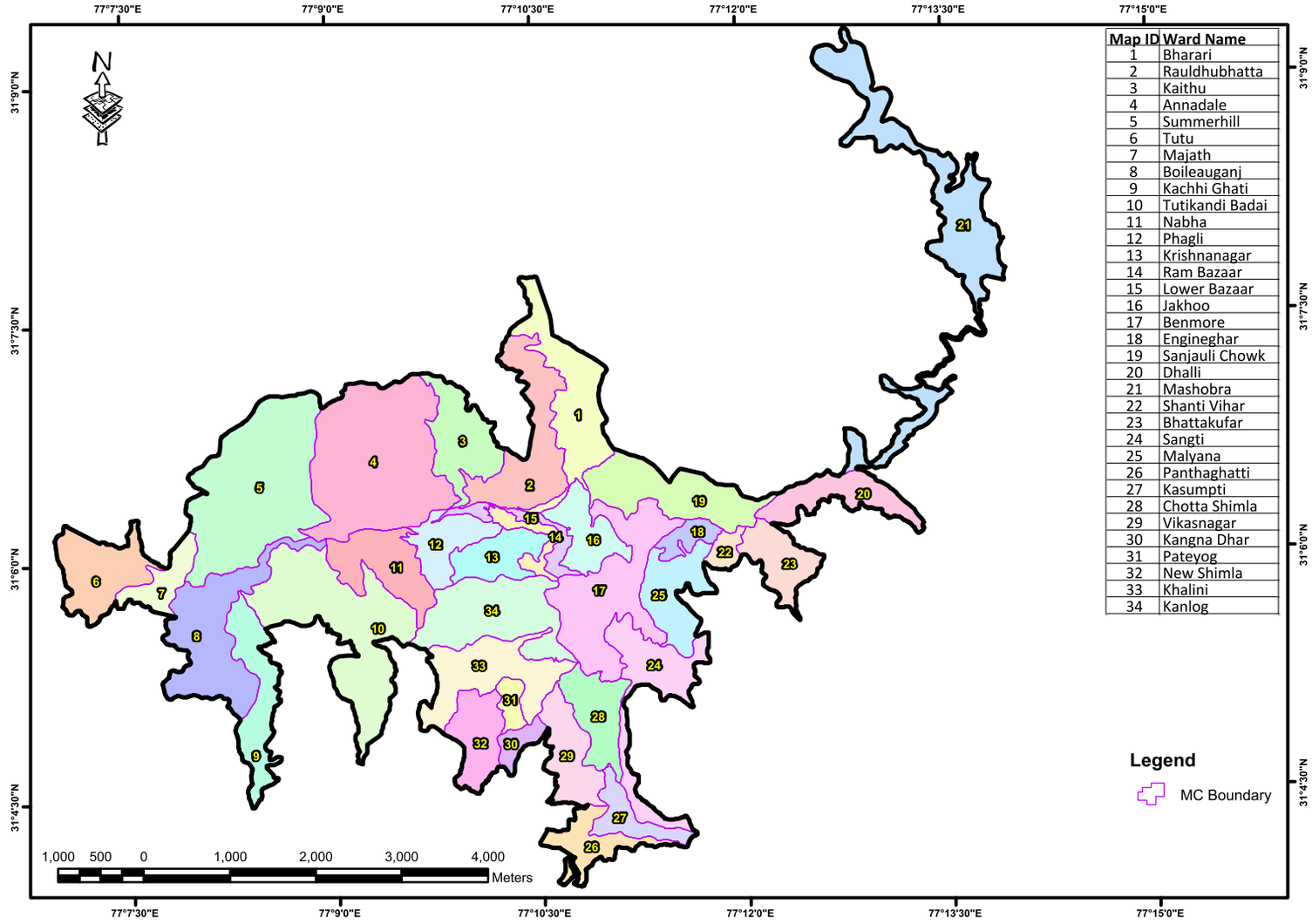
18.	Crow Borough	Railway Station, Shimla	(11) Nabha	31.1030492, 77.1584624
19	Delphine lodge	Milsington Estate	(28) Chhota Shimla	-
20	Dimple Lodge	Near Indian Oil Petrol Pump, Chhota Shimla	(28) Chhota Shimla	31.0928432, 77.1819132
21.	Eaglemount	Eaglemount, Bishop House, Navbahar	(28) Chhota Shimla	31.0943615, 77.1874704
22.	ECI Chalet Day School	The Mall	(15) Lower Bazar	31.0987976, 77.1757505
23.	Ellerslie	HP Secretariate, Chhota Shimla	(28) Chhota Shimla	31.0876205, 77.1808757
24.	Emm Villa	-	-	-
25	Erneston	-	-	-
26.	Foswell	Chhota Shimla to Kasumpti Road	(28) Chhota Shimla	31.0828383, 77.1806825
27.	Gaiety Theatre	The Mall	(15) Lower Bazar	31.104356, 77.1738961
28.	General Post Office	The Mall	(2) Ruldu Bhatta	31.1053979, 77.1717513
29.	Gorton Castle	AG Office, Near Victory Tunnel	(3) Kaithu	31.1050777, 77.1631381
30.	Govt. Degree College Sanjauli	Sanjauli	(19) Sanjauli Chowk	31.1065882, 77.1885509
31.	Grand Hotel	Kali Bari Road	(2) Ruldu Bhatta	31.1066448, 77.1681215
32.	Green Gate	Near Keleston	(1) Bharari	31.11417, 77.18194
33.	H.P State Library	The Ridge	(16) Jakhu	31.1045426, 77.1757222
34.	Hainault	Hainault Public School, Raj Bhawan Road, Chotta Shimla	(28) Chhota Shimla	31.0939968, 77.1781599
35.	Holly Lodge	Jakhu Road	(16) Jakhu	31.1047036, 77.1781828
36.	ICICI Bank Building	Scandal Point	(15) Lower Bazar	31.1053245, 77.1723161
37.	Inverarm (State Museum)	Near Doordarshan Kendra, Chaura Maidan	(4) Annadale	31.1031447, 77.1508805
38.	Jakhoo Temple	Jakhoo	(16) Jakhu	31.1010853, 77.1841638

39.	Kali Bari Temple	Bantony Hill	(2) Ruldu Bhatta	31.1058624, 77.1666489
40	Kamla Nehru Hospital (Old)	NH 22, Milsington Estate	(28) Chhota Shimla	31.096744, 77.1744055
41.	Ladies park	The Mall	(15) Lower Bazar	31.1034396, 77.1772997
42.	Lady Hardinge Cottage	Near HelpAge office	(34) Kanlog	31.0991138, 77.1731741
43.	Manorville	Rajkumari Amritkaur Bhavan, Summer Hill	(5) Summer Hill	31.1130465, 77.1397564
44.	Morvyn, ITI Shimla	Summer Hill	(5) Summer Hill	31.1052415, 77.1442023
45.	Oakover Building	Oakover, Chief Minister's Residence	(28) Chhota Shimla	31.0958793, 77.175945
46	Deputy Commissioner Office	The Mall, Shimla	(15) Lower Bazar	31.1052682, 77.1703994
47.	Parimahal	State Institute of Health and Family Welfare, Parimahal	(27) Kasumpti	31.071797, 77.1820183
48	Police Station Boileauganj	West Police Station, Boileauganj, Shimla 171005	(8) Boileauganj	31.0994782, 77.1407511
49	Police Station Chhota Shimla	Chhotta Shimla	(28) Chhota Shimla	31.0882281, 77.1797471
50	Police Station Sadar	Near Sabji Mandi	(15) Lower Bazar	31.1050777, 77.1631381
51.	Post Office Chaura Maidan	Ambedkar Chowk	(4) Annadale	31.1034487, 77.1538108
52.	Prakash Niwas	Near SBI Main Branch, Shimla	(3) Kaithu	31.1054899, 77.1651989
53.	Race View	Opposite Vidhan Sabha, Comely Bank	(4) Annadale	31.1038121, 77.1598802
54.	Railway Board Building	The Mall Road Shimla	(3) Kaithu	31.1053833, 77.1642677
55.	Post office Summer Hill	Summer Hill, Shimla. 171005	(5) Summer Hill	31.1092597, 77.1398163
56.	Railway Station, Summer Hill	Summer Hill	(5) Summer Hill	31.1086921, 77.1387749
57.	Rippon Hospital	DDU Hospital, Near Old Bus Stand	(14) Ram Bazar	31.1036411, 77.1714011
58.	Routhney Castle	Sheeshe Wali Kothi, Jakhoo Road	(16) Jakhu	31.1045628, 77.1795967
59.	Shimleshwar (Shiv Mandir)	Middle Bazaar	(15) Lower Bazar	31.1045895, 77.1728722

60.	Sidhowal Lodge	Near Christ Church, The Ridge	(16) Jakhu	31.104813, 77.1761561
61.	South Gate	Opposite Ayurvedic Hospital, Chhotta Shimla	(28) Chhota Shimla	31.084937, 77.1810433
62.	Spring Field	Spring Field Hotel, Opposite to Tibetan's School, Chotta Shimla	(28) Chhota Shimla	31.0860821, 77.1811639
63.	St. Andrew's Church	HPU Department Of Evening Studies, The Mall	(2) Ruldu Bhatta	31.1055513, 77.1713233
64.	St. Edward's School	Himland	(34) Kanlog	31.0952467, 77.1720493
65.	St. Mark's Church	Near Kalbari Temple	(2) Ruldu Bhatta	31.1058241, 77.1661639
66.	St. Michael's Cathedral	Western Command	(14) Ram Bazar	31.1053647, 77.1690592
67.	St. Thomas School	Near ARTRAC	(14) Ram Bazar	31.1048341, 77.1690249
68.	State Bank of India	The Mall	(3) Kaithu	31.1054119, 77.1656726
69.	Sterling Castle	Longwood	(1) Bharari	31.1140373, 77.1797077
70.	Strawberry Hill	Chhota Shimla	(28) Chhota Shimla	31.0835546, 77.1816074
71.	Tara Hall	Loreto Convent School, Upper Kaithu	(3) Kaithu	31.1097549, 77.165124
72.	The Burj	The Burj House, Chaura Maidan	(4) Annadale	31.1025218, 77.1481169
73.	The Cecil	The Oberoi Cecil, Chaura Maidan	(4) Annadale	31.1033383, 77.1545181
74.	The Cedars	Forest Hill Road, Milsington Estate, Chotta Shimla	(28) Chhota Shimla	31.0964082, 77.1770436
75.	The Clarke’s Hotel	Near HP High Court	(15) Lower Bazar	31.0999146, 77.1755942
76.	The Kalka Shimla Railway Line	Railway Station, Shimla	(11) Nabha	31.1024875, 77.1593591
77.	Thistle Bank (East)	Near Dayanand Public School	(15) Lower Bazar	31.1052909, 77.166115
78.	Torrentium Cottage	Near Tibetan’s School, Chhota Shimla	(28) Chhota Shimla	31.0869439, 77.1801047
79.	Toryne House			
80.	Town Hall	The Mall	(15) Lower Bazar	31.1047879, 77.1730362

81.	United Services Club	U.S. Club, Shimla	(16) Jakhu	31.1002069, 77.1771199
82.	Viceregal Lodge	Indian Institute of Advanced Studies, Rashtrapati Niwas	(5) Summer Hill	31.1035271, 77.1421842
83.	Vidhan Sabha	Chaura Maidan Road	(11) Nabha	31.1036604, 77.1607838
84.	Walsingham (D.C. Residence)	The Ridge	(16) Jakhu	31.1045448, 77.1769903
85.	Winter Field	PWD Office, Near Dayanand Public School	(14) Ram Bazar	31.1046062, 77.1673893
86.	Wood Bank Rest House	Mall Road, Near AG Office	(4) Annadale	31.1030744, 77.157171
87.	Woodville Palace Hotel	Raj Bhawan Road, Chhota Shimla	(28) Chhota Shimla	31.0916972, 77.177836
88.	Yates Palace	ADC Banglow	(17) Benmore	31.0905118, 77.1788559
89.	YMCA	The Ridge	(16) Jakhu	31.1038344, 77.1772866
90.	YWCA	Kali Bari Road	(2) Ruldu Bhatta	31.1058069, 77.1707644

Annexure- 06 : Map of Municipal Corporation Shimla (34 Wards)



Map ID	Ward Name
1	Bharari
2	Rauldhubhatta
3	Kaithu
4	Annadale
5	Summerhill
6	Tutu
7	Majath
8	Boileauganj
9	Kachhi Ghati
10	Tutikandi Badai
11	Nabha
12	Phagli
13	Krishnanagar
14	Ram Bazaar
15	Lower Bazaar
16	Jakhoo
17	Benmore
18	Engineghar
19	Sanjauli Chowk
20	Dhalli
21	Mashobra
22	Shanti Vihar
23	Bhattakufar
24	Sangti
25	Malyana
26	Panthaghatti
27	Kasumpti
28	Chotta Shimla
29	Vikasnagar
30	Kangna Dhar
31	Pateyog
32	New Shimla
33	Khalini
34	Kanlog

Source: HAFRI Shimla (2021)

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