



**NATIONAL DISASTER MANAGEMENT GUIDELINES**  
**RE-VAMPING OF FIRE SERVICES**

**September 2010**



**NATIONAL DISASTER MANAGEMENT AUTHORITY**  
**GOVERNMENT OF INDIA**

## National Disaster Management Guidelines— Re-vamping of Fire Services

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The National Disaster Management Guidelines on Re-vamping of Fire Services are formulated under the Chairmanship of Shri Jyoti Kumar Sinha, Member, NDMA in consultation with various stakeholders, service providers and specialists in humanitarian response from across the country.



# Preamble

These Guidelines on scaling, type of equipment and training of Fire Services are issued by the National Disaster Management Authority (NDMA) under Section 6 of the DM Act 2005 for effective, efficient and comprehensive management of Fire incidents and standardization of the Fire services in the country. The Vision is to minimize loss of life and property by strengthening and standardizing fire response mechanisms, equipment and training at different appropriate levels in the country.

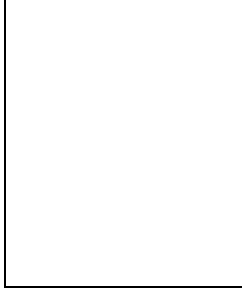
Realization of shortcomings in the fire fighting capabilities of our country as a whole, and with a desire to address the critical gaps, the NDMA has been engaged in constant dialogue with various authorities right from the Prime Minister's level to the 13<sup>th</sup> Finance Commission (FC). At the Prime minister's level it has been decided that the Planning Commission could play a role in persuading the states to make prioritized plan and provide proper allocations for the fire services in their annual five year plans. The discussion with the 13 FC led to the appreciations of the problem by them and allotments of the funds to all the states which had submitted proposals before it and direction to the other remaining states to specifically spend on fire services out of the funds allotted by the FC to the concerned local bodies in their respective jurisdictions.

It is expected that the glaring weakness because of lack of proper plan and availability of adequate funds the situation will improve in next five years by the two pronged approach of;

- Prioritized and planned steps in the state five year plans
- Expeditious actions by the local bodies and the state government as directed by the 13<sup>th</sup> FC

These guidelines have been prepared with help of a core group consisting of the members of the standing fire advisory council, Gol and other experts in the field. In order to operationalize the process in a standard manner the NDMA is issuing these guidelines in regard to scaling / type of equipment, man power and their training for towns and cities / rural areas. All states government and local bodies concerned shall follow it.

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**National Disaster management Authority**  
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## **FOREWORD**

New Delhi  
September, 2010

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## ACKNOWLEDGEMENTS

New Delhi  
September, 2010

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# 1

## FIRE SERVICES IN INDIA AND ITS PRESENT STATUS

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### **Evolution of fire services in India**

The development of Fire Services in India to a large extent was influenced by India's political and historical association with Britain. Regular Fire Services in India have their origin at Bombay & Calcutta. The great Fire of Bombay occurred in 1803 and the first nucleus of Fire service took shape in India with police being entrusted with fire fighting jobs. In 1822 the Fire Service in Calcutta was organized under the Calcutta Police. In 1855 the Bombay Fire Brigade was again formally placed under the Police as a part-time function. In 1864 it was placed jointly with the Government and Municipal Corporation. In 1872 the Calcutta Fire Brigade came to be financed by the Calcutta Municipal Corporation. By the Municipal Act 1872 and 1878 Insurance Companies were made to contribute towards the maintenance of the Fire Brigades. In 1888 through the Bombay Municipal Corporation Act, protection against Fire became obligatory for the Bombay Municipal Corporation. The Madras city fire brigade was established in 1908 by the Municipal corporation of Madras after a devastating fire in the city. Delhi is believed to have had a Fire Brigade in 1867, but the organized form of Fire Station are believed to have been started in 1896 and was under the Municipal Corporation. Presently Delhi has its own Fire Service Act and is under the Government of the NCT of Delhi since 10<sup>th</sup> November, 1994.

While in Britain a National Fire Service was started during the Second World War, no such National Fire Service was formed in India. As a sequel to the Second World War however, a need was felt to organize and improve the fire brigade in India also. The concept of Auxiliary Fire Services in the Civil Defence was also introduced, but it never took root in the country. The Fire Brigades in India, remained

heterogeneous in character and majority of them continued to remain ill-equipped and differently organized.

### **Present status**

Fire services in India comes under the 12<sup>th</sup> Schedule of constitution vide Article 243W dealing with Municipal functions. Needless to say that it is a state subject. Presently Fire prevention and Fire Fighting Services are organized by the concerned States and UTs. Ministry of Home Affairs, Govt. of India, renders technical advice to the States and UTs and Central Ministries on Fire Protection, Fire Prevention and Fire Legislation.

In view of the short comings in the fire services in different States of the country and the need to up-grade it, the Government of India in 1956, itself had formed a **“Standing Fire Advisory Committee”** under the Ministry of Home Affairs. The mandate of the committee was to examine the technical problems relating to Fire Services and to advise the Government of India for speedy development and up gradation of Fire Services all over the country. This committee had representation from each State Fire Services, as well as the representation from Ministry of Home, Defence, Transport, Communication and Bureau of Indian Standards. This Committee was renamed as **“Standing Fire Advisory Council” (SFAC)** during the year 1980.

Fire Services in Gujarat, Chhatisgarh, Punjab, Maharashtra, Himachal Pradesh, Haryana and Madhya Pradesh excluding Indore are under the respective concerned Municipal Corporations. In other remaining States it is under the Home Department. While some States have enacted their own Fire Act, some others have not. It is but natural that there is no standardization with regard to the scaling of equipment, the type of equipment, or the training of their manpower. In each state it has grown according to the initiatives taken by the States and the funds provided for the Fire Services. Presently the only Basic Life Line of Fire & Emergency Services which is fully committed to the common public, is the Municipal and State Fire Services. The Airport Authority, Big Industrial Establishments, CISF and Armed Forces, however

also have their own Fire Services and many a times in case of need rush in aid to the local Fire Services.

Apart from the lack of being a proper government department with a complete developmental plan, each State Fire Services have their own organizational structure, administrative setup, funding mechanism, training facilities and equipment.

### **Increasing trend of fire incidents in India<sup>1</sup>**

The incidents of death due to accidental fire in the country are quite alarming. Figures collected in 2007 show that there were total of 20,772 deaths in comparison to 19,222 deaths in the year 2006. The trend is increasing and the States need to take immediate action for revamping State Fire Services. <sup>1</sup>

### ***Some of the major fire incidents that occurred in India in the past four decades are as follows<sup>2</sup>***

- i. On 31/1/1974 an explosion in a rail transport (fire work products) in led to deaths of 42 people in Allahabad.
- ii. A total of 78 people were died and 88 were injured due to fire in a cinema hall in Tuticorin, Tamil Nadu on 29/07/1979
- iii. Similarly, in 1981, explosion in a firework factory in Mettupatti killed 32 workers, including women and children.
- iv. In 1992 two separate incidents of firework disasters in Tharia and Ludhiana accounted for 25 and 40 deaths respectively.
- v. Explosion at a firecracker factory in Rohtak, Haryana on 24/5/95 resulted in a death toll of 23 people, which included 13 women, 6 children and 4 men.
- vi. Over 500 people were dead and 300 injured due a fire in school function in Dabwali, Haryana on 23/12/1995
- vii. In the same year a fire at a cinema theater in Delhi killed more than 60 people and injured hundreds.

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<sup>1</sup> Source – [www.ncrb.nic.in](http://www.ncrb.nic.in)

<sup>2</sup> Source – [www. ....](http://www. ....)

- viii. An accidental fire in the Brihadeswara temple in Thanjavur district of Tamil Nadu on 9/6/1997 resulted in more than 60 deaths and 250 were injured in the stampede to escape
- ix. At least 204 people died due to a fire in a religious discourse at Baripada, Orissa in February 1997.
- x. At least 45 people were killed (16 women and eight children were among the death) and 16 seriously injured on 7/11/1999 in Sonapat, Haryana, when a fire began after sparks from some high-tension wires over the market fell over a firecracker shop an adjoining clothes store. Some 25 stores, some of them selling plastic wares, were completely gutted.
- xi. In November 2002, at least 17 people were killed and 27 injured (five in critical conditions) when two gas cylinders in a van carrying fireworks exploded, bringing down several houses nearby at Athur near Salem. Those dead included seven men, five women and five children. 15 houses on either side of the street came down in the explosion, trapping and killing the people inside them. Crackers, stored in one of the buildings, were being loaded into the van, which was already carrying two gas cylinders. The van was gutted in the fire.
- xii. A blast occurred on 4/11/04 in Srikakulum, Andhra Pradesh as explosives stored unauthorised by a cracker manufacturer in Chinna Bazar area caught fire. The incident killed 13 and seriously injured 13 others. Several other nearby houses have been badly damaged. This was an illegal factory; they had no license for manufacturing firecrackers.
- xiii. A fire breakout in a school at Kumbakonam on 16th July 2004 resulted in 93 deaths of primary school children.
- xiv. Several hundred tsunami survivors at Nagapattinam, Tamil Nadu are homeless again after fire gutted their temporary shelters. The blaze was started by fireworks being used to celebrate Diwali. The 90 families affected have been re-housed in a local hall on 1.11.2005.
- xv. Fire engulfed three illegal firecracker factories in Khusropur village (22 miles east of the state capital Patna, eastern state of Bihar) on 15/9/05 accounted for at least 35 deaths and injured at least 50 people. The factories were being run from three houses in the village. The fire was sparked by an electrical short circuit and quickly spread to the flammable material stored in the factories.

- xvi. Fire in a fireworks plant in Tamil Nadu on 22.2.2006 killed 10 and seriously injured 19. The fire was caused by an explosion at a stack of 'rockets' being dried, against rules, under trees. Extremely hot climate and friction had triggered the explosion, the resultant fire spread instantly to the shed where 'packed rockets' had been stored and from there, it spread to other sheds.
- xvii. Fire breakout in a trade fair in Meerut, UP on 10.4.06 killed more than 57 people and injured thousands.

In Independent India, the Standing Fire Advisory Committee has been deliberating extensively and regularly making various recommendations to the Government for the improvement of Fire Services in India. The SFAC had recommended the re-organisation of Fire & Emergency Services in India way back in 1956 and also recommended a uniform Fire Service Legislation in all the States. The SFAC had also prepared a **Model Fire Service Bill** and the same was circulated to all the State Governments by the Ministry of Home Affairs, Govt. of India, Letter No. 28/03/56-ER-II, dated 17/10/1956. For convenience of the stakeholders a copy of Model Fire Service Bill is being enclosed in **Annexure - 1**

## **SHORTCOMINGS**

During their regular deliberations the SFAC have noticed the following shortcomings in the Fire Services in India :

- Lack of Unified Fire Services in some of the States;
- Lack of proper organizational structure, recruitment, training and Career Progression of its personnel;
- lack of adequate modern equipment and their scaling, Authorisation & Standardization;
- Lack of appropriate and adequate funding;
- Lack of Training Institutions;
- Lack of Infrastructural facilities – Fire Stations and accommodation of personnel;
- Lack of vulnerability analysis;
- Lack of Public Awareness (DOs & DON'Ts), mock and evacuation drills; and

- Lack of uniform Fire Safety Legislation in some of the States.

### **BASIC NORMS FOR SETTING UP FIRE STATIONS**

The SFAC has also laid down norms for setting up of fire stations. The criterion for setting them up are as follows :-

- Response time
- The area to be covered
- The scale of population to be served
- The number of minimum standard equipment that may be needed to attend to the duty
- Man power required for the duty

### **OVERALL SHORTAGE IN THE COUNTRY**

On the basis of the laid down norms, the SFAC have even worked out the number of Fire Stations required in India and the existing deficiencies :

- i) fire stations – 97.54%
- ii) Fire Fighting & Rescue Vehicles – 80.04%
- iii) Fire personnel – 96.28%

# 2

## URGENT STEPS NEED TO BE TAKEN

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Though deliberations for improving the Fire Services in the country have been done regularly and the deficiencies have been clearly identified, the improvement on the ground level has been too little and very delayed. The result is that even in the recent fire incidents :-

- Kolkata - Bada Bazar – dated 12.01.2008, 2500 shops were gutted, property **worth Rs..... Crores** destroyed and fire could not be controlled for days;
- Jaipur – IOC Depot – dated 30.10.2009, 12 people were killed, 200 injured, half a million people evacuated. The fire could not be controlled for over a week because nothing was available to put out the oil fire; and **estimated loss .....**
- Kolkata – Park Street – dated 23.03.2010, 26 people were killed, hydraulic ladder could not reach in time because of traffic congestion and it was stationed in a garage in Behala area far from the down town and business hub of Kolkata.

Unless there is a conscious and planned effort in all the States, the situation is not likely to improve. There is an urgent need therefore, to start a planned and determined move towards revamping the fire services in India, in order to prevent deaths and huge loss of property.

The First Step for every State is to prepare a plan for the whole State on the basis of their own vulnerabilities, norms laid down and workout the number of Fire

Stations and Equipments they require. They should include this Plan in the State Annual Plan and take it up with the Planning Commission of India for sanction. This would solve financial crunch, if any.

The Government of India has already agreed to the provincialisation of Fire Services in India with uniform Fire legislation in all the States. Even this has not been done in all the States. Because lack of provincialisation in some States the different Fire Brigades in various Municipal Areas are not under one command and thus cannot be mobilized in grave emergencies. This even inhibits Career Progression of the Fire Service personnel which is not good for the level of their morale and motivation. Being heterogeneous naturally also leads to lack of a proper standardized **Training and Equipments**.

The State Government should consider forming a State Level Fire and Emergency Services by clubbing all the Municipal Fire Services. While making a uniform Fire and Emergency Services in the State, the Govt. shall also introduce a State level Uniform Fire Protection Legislation, which will make provisions for Legal / Penal actions against defaulters and culprits. The provincialised Fire & Emergency Services must also be under a professional fire fighter. In view of the possibility of other disasters the Fire Services should be made into multi hazard response unit.

## **RECENT INITIATIVES**

As mandated, the NDMA took up the alarming and unacceptable inadequacies in Fire Equipments, Manpower, Training and Financial Crunch amongst the Fire Services in the country at various levels.

It was placed before the NDMA meeting chaired by the Prime Minister of India on 18<sup>th</sup> Jan.,2010, where the Chairman of the Planning Commission of India was also present. It was decided that the Planning Commission would advise the State Governments during the process of drawing up their Annual Plans to prioritise and attend to the upgradation of the Fire Services and removal of deficiencies.

Towards the same goal of revamping of Fire Services and removal of the glaring deficiencies in the Fire Services all over the country, the NDMA had also engaged in a constant dialogue over the past three years with the 13<sup>th</sup> Finance Commission. They have fully appreciated this problem and taken necessary steps. The details of the 13<sup>th</sup> Finance Commission will be discussed in the following chapter.

In order to guide the States and to ensure that a comprehensive and focused re-vamping takes place all over the country. These guidelines assume a great significance and needs to be followed meticulously so that every step and action taken fits into the larger comprehensive plan and fulfills the requirement of the country.

With a planned infusion of funds through the above twin pronged approach, the establishment of a Uniform Fire Service with adequate Fire Stations and proper Strength, appropriate equipments, proper training in Rescue Techniques, and a well thought out Career Progression of its' personnel, the fire fighting capabilities in the country will have a tremendous improvement and the Fire Services will become more efficient and effective.

Though the operationalisation of the 13<sup>th</sup> Finance Commission Recommendations and revamping of the Fire Services in India, will be discussed in detail in the following chapter, it would be proper to place the overall strategy of accessing funds for both Urban and Rural Fire Services. The following steps are recommended :

- a) Planning and working out the complete (Urban & Rural) requirements of the State, based on the norms laid down and local vulnerabilities.
- b) Add up all the existing facilities and equipments already available and reduce them from the overall requirement calculated. Care should be taken that old items which need to be condemned should not be treated as available items.
- c) The total requirement of the State so calculated should be classified into Urban and Rural categories.

- d) Fully utilize the available funds from the 13<sup>th</sup> FC for the revamping of the Urban Fire Services. It should be kept in mind that the funds under 13<sup>th</sup> FC will be available in a phased manner, as already enumerated by them in their report. The revamping plan naturally should also be in a similar corresponding phased manner.
- e) It should further be ensured that the funds under the Special Performance Grant should also be accessed by ensuring compliance of all the nine conditions laid down by the 13<sup>th</sup> FC in its' report for accessing this fund. The State Government should ensure that all the conditions are fulfilled. The States which do not comply will not get any money under this head and the total money available will be distributed among the States which have complied.
- f) For remainder of the total requirement as calculated earlier (both Urban and Rural) should be simultaneously placed in the State Five Year Plan and demand placed before the Planning Commission of India, where it will be sanctioned.

Through the above strategy the revamping of both the Urban and Rural Fire Services can take place in a phased but definite manner.

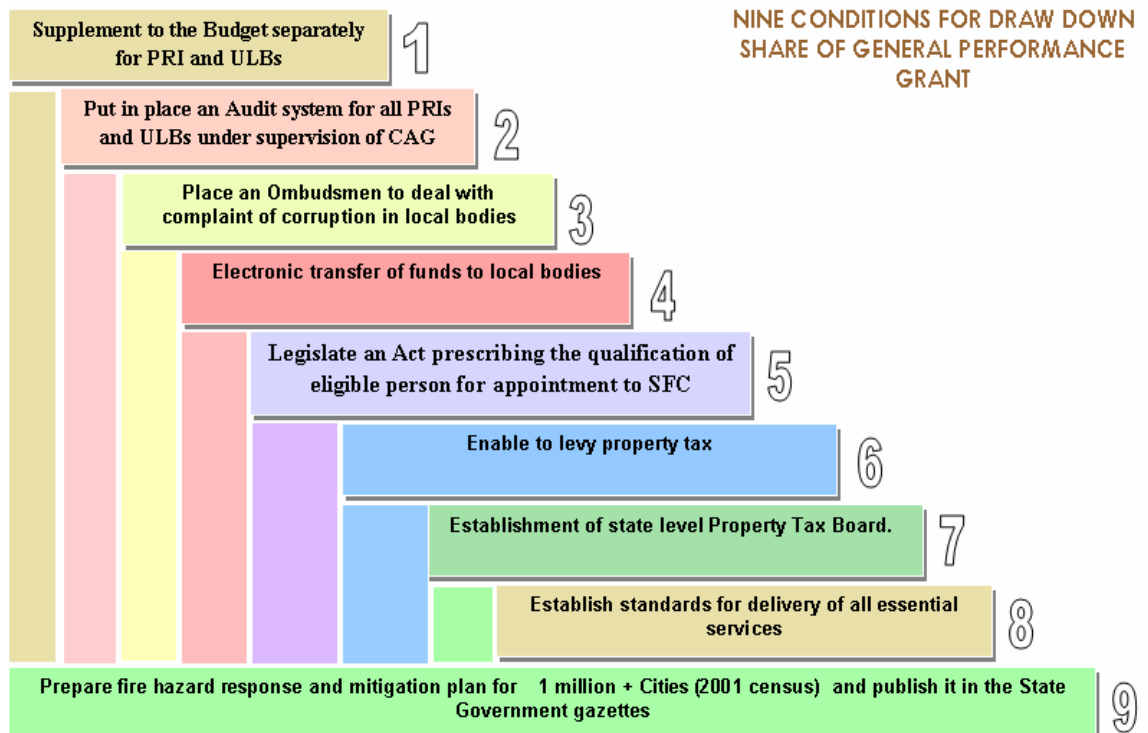
Suggestive Scaling of equipment and manpower is enclosed in **Annexure – 2 and 3.**

# 3

## RECOMMENDATIONS OF THE 13<sup>TH</sup> FINANCE COMMISSION

Gist of the important and relevant 13<sup>th</sup> Finance Commission Report regarding Fire Services are as follows :-

1.1 Para10.161: For the years 2011-2012, 2012-13, 2013-14 and 2014-15, a State Government will be eligible to draw down its share of the general performance grant shown in Annex 10.15b only if it complies with the following nine conditions :-



These conditions must be met by the end of a fiscal year (31 March) for the State to be eligible to draw down its performance grant for the succeeding fiscal year.

Condition No. ix: All Municipal Corporations with a population of more than 1 million (2001 census) must put in place a Fire Hazard Response and Mitigation Plan for their respective jurisdictions. Publication of these plans in the respective State Government gazettes will demonstrate compliance with this condition.

1.2 Revamping Fire and Emergency Services : Para 10.171: The National Disaster Management Authority (NDMA) has drawn the Commission's attention to the dismal state of fire services in the country. NDMA has estimated the deficiency of the services in the country as under:

i)	Fire Stations -	97.54%
ii)	Fire Fighting & Rescue Vehicles -	80.04%
iii)	Fire Personnel -	96.28%

1.3. Para 10.172: NDMA argued for allocation of grants worth Rs. 7,000 crore to the states to meet these shortages. We accept the need to restructure fire and emergency services across the urban and rural areas of the country and recognise that the stipulation in Para 10.161(ix) is merely a first step. Though this is an important area, we are not imposing an expenditure conditionality on local bodies in view of our approach to conditionality outlined in Para 10.166. **We recommend that a portion of the grants provided by us to the urban local bodies be spent on revamping of the Fire Services within their respective jurisdictions. These bodies could provide financial support to the State Fire Services Department towards this objective. In this process, they could draw upon the expertise of State agencies and the National Disaster Management Agency, as required.**

1.4 Para 11.38: The NDMA has focused especially on the current state of fire services in the country and has argued for the upgradation of fire-preparedness and provision of a grant of Rs. 7000 crore to the State Governments for this purpose. We have considered this issue in our chapter on local bodies.

1.5 Para 10.145: Keeping these factors in mind, we recommend that grants be given to local bodies as detailed in Table 10.4

Table 10.4: Recommended Grants for Local Bodies (Rs. crore)

Year	BE 2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2010-15
Percentage of the previous years' divisible pool to be given to all states as grant under Article 275 of the Constitution-General Basic Grant and Total Special Areas Grant		1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
General Performance Grants			0.50%	1.00%	1.00%	1.00%	0.78%
Aggregate Grants to Local Bodies		1.50%	2.00%	2.50%	2.50%	2.50%	2.28%
Projected (Rs crore) Divisible Pool: 2009-14	545463	636183	746179	880156	1038188	1224595	3846169*
General Basic Grant and Total Special Areas Grant		8182	9543	11193	13202	15573	57693
General Basic Grant		8022	9303	10873	12883	15253	56335
General Performance Grant		0	3181	7462	8802	10382	29826
General Basic Grant & General Performance Grant		8022	12484	18335	21685	25635	86161
Total Special Areas Grant		160	239	319	319	319	1357
Special Areas Basic Grant		160	160	160	160	160	798
Special Areas Performance Grant		0	80	160	160	160	559
Aggregate Grants to Local Bodies		8182	12724	18654	22004	25955	87519

\* Period 2009-10 to 2013-14. Totals may not tally due to rounding off.

1.6 Para 12.8: Grants for local bodies in line with Para 4(iii) of the ToR and for disaster management in terms of Para 8 of the ToR have been dealt with at length in chapters 10 and 11, respectively. These grants also flow to the states under Article 275 of the Constitution. We have listed these grants in Table 12.1 of this section in order to be comprehensive. The grants-in-aid of the revenues

of states, as recommended by us for the award period 2011-15, are indicated below:

**Table 12.1: Grants-in-Aid to States**

		<i>(Rs. crore)</i>
I	Local Bodies	87519
II	Disaster Relief (including for capacity building)	26373
III	Post-devolution Non-plan Revenue Deficit	51800
IV	Performance Incentive	1500
V	Elementary Education	24068
VI	Environment	15000
	(a) Protection of Forests	5000
	(b) Renewable Energy	5000
	(c) Water Sector Management	5000
VII	Improving Outcomes	14446
	(a) Reduction in Infant Mortality Rates	5000
	(b) Improvement in Supply of Justice	5000
	(c) Incentive for Issuing UIDs	2989
	(d) District Innovation Fund	616
	(e) Improvement of Statistical Systems at State and District Level	616
	(f) Employee and Pension Data base	225
VIII	Maintenance of Roads and Bridges	19930
IX	State-specific	27945
X	Implementation of model GST	50000
	<b>Total</b>	<b>318581</b>

1.7 Para 12.117: The state-wise details of grants-in-aid recommended for needs that are specific to each state are given below:-

Andhra Pradesh: Para 12.123: The state has represented for an allocation to strengthen Fire and Emergency Services by providing essential equipment to convert the service into a multi-hazard response unit. We recommend a grant of Rs. 17 crore on this account.

**Andhra Pradesh - Rs. 17 Crore**

Haryana: Para 12.171: With rapid industrialisation of many parts of Haryana, the fire service department has to be upgraded and adequately equipped to face emergencies. We allocate an amount of Rs. 100 crore for this.

**Haryana - Rs. 100 Crore**

Mizoram : Para 12.245: In response to the State Government's memorandum, we recommend an amount of Rs. 20 crore for building new fire stations to revamp the fire and emergency services in the state.

**Mizoram - Rs. 20 crore**

Orissa : Para 12.261: The state memorandum has highlighted the enormous gap in provision of fire services in the state, based on which, we recommend an amount of Rs. 150 crore for this purpose. The state should ensure that part of this fund is utilised to upgrade the fire service training institution and to provide training to fire service personnel.

**Orissa - Rs. 150 Crore**

West Bengal : Para 12.319: Having converted the West Bengal Fire Service Department into the West Bengal Fire and Emergency Department in view of new challenges, the State Government has requested a grant for its upgradation and strengthening. We recommend a grant of Rs. 150 crore to fill the infrastructure and equipment gaps in the Department.

**West Bengal - Rs. 150 Crore**

Uttar Pradesh (Varanasi) Para 12.301: The city of Varanasi is a centre of national and international importance for pilgrims and tourists and thus, needs support to improve its infrastructure. Funds have been requested separately to strengthen fire services in the state. We propose a grant of Rs. 20 crore to upgrade the fire and emergency services in Varanasi.

**Uttar Pradesh - Rs. 20 Crore**

Tripura: Para 12.299: As requested by the State Government, we recommend Rs. 15 crore for construction of the headquarters of fire services in the state.

**Tripura - Rs. 15 Crore**

Gist of the important and relevant 13<sup>th</sup> Finance Commission Report regarding Fire Services are as follows :-

## 1.8 Table 12.6: Grants-in-Aid for State-specific Needs

Table 12.6: Grants-in-Aid for State-specific Needs

(Rs. crore)

State	2010-11	2011-12	2012-13	2013-14	2014-15	2010-15
1	2	3	4	5	6	7
Andhra Pradesh	20.00	312.50	312.50	312.50	312.50	1270.00
Arunachal Pradesh	0.00	75.00	75.00	75.00	75.00	300.00
Assam	0.00	150.00	150.00	150.00	150.00	600.00
Bihar	0.00	461.25	461.25	461.25	461.25	1845.00
Chhattisgarh	0.00	320.25	320.25	320.25	320.25	1281.00
Goa	0.00	50.00	50.00	50.00	50.00	200.00
Gujarat	0.00	325.00	325.00	325.00	325.00	1300.00
Haryana	0.00	250.00	250.00	250.00	250.00	1000.00
Himachal Pradesh	0.00	87.50	87.50	87.50	87.50	350.00
Jammu & Kashmir	1000.00	87.50	87.50	87.50	87.50	1350.00
Jharkhand	0.00	356.25	356.25	356.25	356.25	1425.00
Karnataka	0.00	325.00	325.00	325.00	325.00	1300.00
Kerala	0.00	375.00	375.00	375.00	375.00	1500.00
Madhya Pradesh	0.00	307.75	307.75	307.75	307.75	1231.00
Maharashtra	0.00	308.75	308.75	308.75	308.75	1235.00
Manipur	0.00	75.25	75.25	75.25	75.25	301.00
Meghalaya	0.00	62.50	62.50	62.50	62.50	250.00
Mizoram	0.00	62.50	62.50	62.50	62.50	250.00
Nagaland	0.00	62.50	62.50	62.50	62.50	250.00
Orissa	0.00	436.25	436.25	436.25	436.25	1745.00
Punjab	30.00	362.50	362.50	362.50	362.50	1480.00
Rajasthan	0.00	300.00	300.00	300.00	300.00	1200.00
Sikkim	0.00	100.00	100.00	100.00	100.00	400.00
Tamil Nadu	0.00	325.00	325.00	325.00	325.00	1300.00
Tripura	0.00	125.00	125.00	125.00	125.00	500.00
Uttar Pradesh	0.00	419.75	419.75	419.75	419.75	1679.00
Uttarakhand	0.00	175.00	175.00	175.00	175.00	700.00
West Bengal	0.00	425.75	425.75	425.75	425.75	1703.00
<b>Total States</b>	<b>1050.00</b>	<b>6723.75</b>	<b>6723.75</b>	<b>6723.75</b>	<b>6723.75</b>	<b>27945.00</b>

# 4

## OPERATIONALISATION OF THE 13<sup>TH</sup> FINANCE COMMISSION RECOMMENDATIONS

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As can be seen from the recommendations, the 13<sup>th</sup> Finance Commission, has noted with concern the very high level of deficiencies in the Fire Services of the country and recognizing the criticality of the Fire Services, they have clearly underpinned the need to restructure and revamp the Fire Services.

The commission has also recommended substantial grants to the States for Disaster Training and related Capacity Building.

Because of the heterogenous nature of the Fire Services in the country the operationalisation of the recommendations may become slightly complicated unless a clear line of action is decided right from the beginning by the both Central and State Governments.

**The FC has made two complimentary recommendations :**

1. *Para 10.161 (ix) of the Report - All Municipal Corporations with a population of more than one million (2001 census) must put in place a fire hazard response and mitigation plan for their respective jurisdictions. The plans for Municipal Corporation areas should be published in the State Gazette as a measure of compliance.*

***[This is a mandatory recommendation and is one of the nine conditions stipulated by the Commission, for drawing the Special Performance Grant. The State governments can access funds under Special Performance Grant only if they comply with the nine conditions including putting in place a Fire Hazard Response Plan for***

***million plus cities. ] (list of the concerned million plus cities placed at Annexure - 4 for convenience).***

2. *Para 10.172 of the Report* - The 13<sup>th</sup> FC has also recommended that a portion of the grant allocated by the commission to the Urban Local Bodies may be spent on the revamping the Fire Services in their jurisdiction. The ULBs may extend financial support to State Fire Services Department in this effort.

***[This provision enables coverage of other than the million plus cities also ]***

For operationalising the first recommendation of the 13<sup>th</sup> FC i.e., preparation of fire hazard response and mitigation plan in all million plus city Corporations, the responsibilities seem to have been entrusted to the Municipal Corporations themselves. Once the plan is prepared, the Municipal Corporations need to get the plans published in the State Gazette.

The NDMA feels that in the absence of proper guidelines, the Municipal Corporations may prepare plans as they think right and fit. It is critical that the National Disaster Management Authority, which is responsible for laying down the policies, plans and formulation of guidelines for disaster management, including Fire Hazards, should formulate guidelines for the preparation of Fire Hazard Response and Mitigation Plan for all Urban and Rural Areas. Of equal importance is that the Fire Response Plan should also incorporate directions for similar plan and basic facilities in all large apartment complex, malls, commercial buildings, educational institutions etc. in the concerned jurisdictions and the same should be publicized and should be enforceable. This would, apart from creating awareness among the public, also equip them to respond and be prepared to face fire hazards.

While these guidelines would motivate, help and guide the Municipal Corporations and State Governments to work out detailed standardized plans for respective jurisdictions, the State Governments will however also have to decide who will prepare these plans – Municipal Corporations or the State Governments. In some

State the Fire Services are under the Home Department while in some others it is with the Municipal Corporations (ULBs).

The Finance Commission vide para 10.172 of its' report, however clearly stated that for the preparation of these guidelines the expertise of the Fire Service Department or the National Disaster Management Authority, may be used.

The State Govt. may need to issue directions to the concerned Municipal Authorities in this connection. Consultation with the concerned Municipal Corporation may be required. It may not be out of place to mention here that the accountability of all agencies working within the city to the city council is also one of the mandatory condition under the JLNURM launched in 2005. All State Governments have accepted this condition and also indicated timelines for compliance. The local bodies should have a role in the planning process concerning the city. Therefore, Fire Hazard Response and Mitigation Plan for a city with 1 million plus population should be finalized in a consultative process, especially when the funds of the ULBs are being used for revamping of the Fire Services. This would give them the satisfaction of participation in the revamping of the Fire Services to the ULBs and the city would be aware of the arrangements made.

The second recommendation of the 13<sup>th</sup> FC is more critical. It is very unlikely that the Municipal Corporations on their own would allocate a portion of the 13<sup>th</sup> FC grants to strengthen the Fire Services in the State or Cities as suggested by the Commission. It is necessary that the State Governments and the Corporations should be motivated to allocate the grants as suggested by the 13<sup>th</sup> FC. **This may be done in two ways:-**

- The ULBs in the States should be advised to allocate a minimum percentage of the grants received by them under 13<sup>th</sup> FC and use them to strengthen the Fire Services in the city as per the plan prepared. This would involve one allotment to the ULBs by the State Governments and then another allotment

by the ULBs to the Fire Service Department and would obviously be only wastage of time, effort and unnecessary paper work.

- Alternatively, the State Government could apportion a percentage of the 13<sup>th</sup> FC grants received for the ULBs at the State level itself before allocating them to the concerned ULBs and utilize the fund so segregated, through Fire Service Department, to strengthen and revamp the Fire Services in the **Urban areas** as per a plan prepared for the purpose, and keep the ULBs informed of the amount of money so spent from their overall allocations.

It is felt that under the given financial status of the ULBs, it is most unlikely that they would allocate a portion of the grants on their own for revamping the Fire Services as suggested by the FC. It is desirable, therefore, that the allocation should take place at State level only. It is desirable and necessary that such an advisory is sent from the Finance Ministry, Government of India, as it is the nodal agency on matters relating to the implementation of the FC recommendations. Similar process may be adopted in case of other Rural Local Bodies also. The Finance Ministry is requested to look at this issue, clarify and give appropriate and necessary direction to the State. Even a five percent allocation would work out to be a substantial amount and would enable and initiate the process of revamping and strengthening the Fire Services to the bare minimum level in the country as a whole.

### **Quantum of allocation required**

Another important aspect is the quantum of allocation required. The NDMA therefore through these guidelines is fixing the basic minimum standards for each Fire Station so that they can function with a modicum of efficiency to begin with. The State Government with the help of Fire Service Departments in their States can calculate the money required for different equipments with the required man-power for the upgradation of their Fire Station according to their respective vulnerabilities. They should then allocate the fund segregated from the grants to the ULBs for the revamping of Fire Services.

Funds available from ULBs will have to be utilized for Fire Services in the Urban Areas only and they may also not be adequate enough to meet the overall requirement as per norms. To meet the short fall of necessary requirements, a comprehensive Plan both for the **Urban and Rural Areas**, should be prepared and taken up in the State Plan for approval and allocation by the Planning Commission of India.

### **Accountability**

A broader question is the implementation of Fire Hazard Response and Mitigation Plans as well as the revamping of Fire Services. As the Fire Services are under the Home Department in a large number of States there is an important requirement for convergence and coordination between the two. The implementation of the plan should also highlight the mechanisms of coordination and convergence and the State governments need to decide this issue right in the beginning. Broadly the questions that need to be addressed includes :-

- Who should prepare the plan – ULB or the Fire Services Department ?
  - If it should be Fire Services Department because of their expertise, what should be the role of ULB in the process ?
  - What relations are required between ULB and City Fire Services Agency to put the process in place, prepare the plan and implement it ?
  - Who is accountable for implementation of the plan put in place ?
- What mechanisms are in place for monitoring and evaluation ?

# 5

## FIRE HAZARD RESPONSE AND MITIGATION PLAN

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### FIRE HAZARD RESPONSE AND MITIGATION PLAN

As mentioned earlier one of the mandatory recommendations of the 13<sup>th</sup> Finance Commission is the preparation of a Fire Hazards Response and Mitigation Plan and its publication in the State Gazette. The FC has also directed that for the revamping and strengthening of Fire Services and for preparing and maintaining Fire Hazard Response and Mitigation Plan, the local bodies can draw expertise in the area from the State Level Fire agencies as well as the National Disaster Management Agency.

Fire Service set up is mainly based on Population, Response Time and Risk Hazard Analysis. In absence of Risk Hazard Analysis, it is difficult to decide on specific special equipment required at a particular Fire Station.

In the cities with population of more than one million, the type of hazard is either High or Moderate. In the areas of High Fire Risk the scale and type of Fire Station and additional fire fighting and rescue equipment should be determined by an actual survey of the area by the Fire Experts.

A general scale of equipment based on Population, Area and Traffic congestion is being laid down in these guidelines. Suggestions of Special Equipments are optional and depends on the possibility and existence of the type of hazard that may require use of such equipments. To cater to the requirements of Fire Cover for type A & B Fire Hazard in the city at least one Fire Station should be available for every 10.36 Sq. KMs of the area to be covered. Covering Rural Area become a serious problem. While creating Fire Fighting capabilities right upto the Block and Gram Panchayat level may be ideal but going up to at least the Sub-Divisional level

everywhere in the country is absolutely necessary. If even, the most minimal cover against fire hazard is to be provided to the Rural Areas.

The suggested scale is prepared with the assumption that there are no facilities / Fire Services infrastructure available in the city. The city is have to reduce the availability, fix the deficiencies and calculate the requirement of the funds.

The specification of equipments, buildings, communication, etc. is only suggestive and bare minimum. State Governments can adopt more advance specifications of design for the appliances, etc. if they so require and have the funds available. The equipment procured should not be below the suggested specification scale.

For proper supervision depending on the number of Fire Stations, suitable Head Quarters and Divisional Head Quarter may need to be created.

The key to proper response in disasters lies in the communication set up available. The Fire Services need to have all possible connectivity like Telephone, Telefax, Computer Recorded Audio and Video facilities (voice logger), GIS, HAM Radio, Wireless, Static and Mobile Sets on two or three frequencies (channels), Satellite and Computer Operational Systems, etc. at all supervisory and response location (Central Control Room, Division Fire Stations and Area Fire Station, etc).

Apart from capabilities to fight fire, Fire Station have the equipment for Rescue, Medical First Response (First Aid, Ambulance, etc.) as well as trained manpower for performing such duties. In view of the present day scenario it would only be proper to equip them in order to be multi-hazard response capable like responding to Nuclear, Biological and Chemical emergencies also. Specialized equipment required for any emergency should be kept in a centrally located fire station where its' requirement is probable or from where it can be mobilized easily when required.

The plan should ensured that the Fire Services will issue No Objection Certificate (NOC) for various occupancies as per National Building Code (NBC)

requirements and applicable Building Bye laws in addition to provide Fire Emergency Cover and other duties as entrusted by the Governments. This will ensure that proper Fire Safety Norms are followed and enforced when new buildings and colonies are made.

The plan should also include a calendar of activities for Mass Awareness to reduce Fire Accidents.

For the convenience of the Stakeholders, a broad outline of the Plan and its' various components are being put together which should be as followed :-

### **1. Background of the city**

- City overview – Population, density, land use, type of buildings, roads and accessibility
- Infrastructure, health care system, economy and industrial locations, schools, and educational institutions, land use, etc.
- Resources and institutions – public and private that can help and support the response system

### **2. Planning process**

- Identify hazards also collect historical hazard information
- Risk and vulnerability assessment – identification of city specific hazard and assessment of risks involved (vulnerability analysis)
- Assessment of assets capabilities – (administrative, financial, technical, regulatory, legal) and determine how the city needs to address the requirements.
- Identify resources –
- Identify key stakeholders in the community and surrounding areas
- Organize resources – identify hazard mitigation teams, agencies, community members

- Decide stages / steps for implementation of plan – key stages, actors, public participations and training and capacity building
- Public outreach and sensitization plan
- Review and incorporation of future developmental plans of the city and other informations
- Identify Role of the government department, expert agencies, NGO, etc.

### **Response and mitigation strategy**

- Goals and objectives, potential mitigation actions
- Public involvement and community participation
- Role of institutions, capability assessment
- Review and prioritize range of appropriate actions based on risks
- Preventive actions – property and natural resources protection techniques and strategies, appropriate equipments and facilities at their own in large colonies and high rise buildings, like water, fire extinguishers, escape routes, etc., public information and awareness actions required, etc.
- Vulnerable assets – people, housing, critical infrastructure
- Potential impacts and damages – social, economical and environmental
- Use of GIS for planning

### **Evaluate and monitoring**

- Making the plan dynamic
- Integration of community participation in the process – role of ward, committees and area SABHAS
- Municipal council approval of the plan
- Implementation plan – role of existing institutional mechanism
- Integration of response and mitigation plan in to existing and ongoing plans and mechanism
- Monitoring implementation
- Evaluation of impacts, etc.

## **BASIC COMPONENTS AND DETAILS OF FIRE HAZARDS RESPONSE AND MITIGATION PLAN**

A basic format of the Fire Hazard Response and Mitigation plan is being provided below for convenience which may be prepared on the basis of details discussed above.

<p>Detail of the City / Area whose plan is being made</p> <ol style="list-style-type: none"><li>1. Name of City having population More than one million as per 2001 Census.</li><li>2. Population of City as per 2001 Census :</li><li>3. Area of City (In Sq.Kms.) :</li><li>4. Population Density of City :</li><li>5. Vulnerability Analysis of the city :</li></ol>
<p>6. Name of the Authority maintaining Fire &amp; Emergency Services i.e. State Fire &amp; Emergency Service/ Local Self Government such as Municipal Corporation / Municipal Council with its detailed Address, District &amp; Pin-code</p>
<p>7. Are you maintaining Fire &amp; Emergency Service as per Gol Guidelines</p> <ol style="list-style-type: none"><li>a) One fire engine for 50,000 population;</li><li>b) One fire station for 10 sq. Km Urban area;</li><li>c) One fire station for 50 sq. Km Rural area; and</li><li>d) Response time maximum 5 minutes in Urban Area and 20 minutes in Rural area.</li></ol>
<p>8. State Level Nodal Authority for Fire Services</p>
<p>9. Administrative Head of Fire &amp; Emergency Service</p> <ul style="list-style-type: none"><li>▪ Name:</li><li>▪ Designation:</li><li>▪ Address with Pin code:</li><li>▪ Telephone No. (with STD Code):</li><li>▪ Fax No.:</li><li>▪ Mobile No.:</li><li>▪ E-Mail:</li><li>▪ Website:</li></ul>
<p>10. Head of Fire &amp; Emergency Service :</p> <ul style="list-style-type: none"><li>▪ Name:</li></ul>

<ul style="list-style-type: none"> <li>▪ Designation:</li> <li>▪ Address with Pin code:</li> <li>▪ Telephone No. (with STD Code):</li> <li>▪ Fax No.:</li> <li>▪ Mobile No.:</li> <li>▪ E-Mail:</li> </ul>
<p>11. Name of Central Fire &amp; Emergency Station and Fire &amp; Emergency Service Headquarters :</p> <ul style="list-style-type: none"> <li>▪ Address with Pin code:</li> <li>▪ Telephone No. (with STD Code):</li> <li>▪ Fax No.:</li> <li>▪ E Mail:</li> </ul>
<p>12. Whether Fire &amp; Emergency service is governed by Any Fire Act or other Act and Rules please provide copies of Acts and Rules.</p>
<p>13. Calendar for the fire safety training and or awareness programme for the public. This should be so designed as to cover majority of the population in the vulnerable area of jurisdiction.</p>
<p>14. Plan and calendar of evacuation drills/ mock drills in vital installations/ industrial plants/ Government buildings.</p>
<p><b>B Risk Assessment, Incident Prevention &amp; Mitigation of City :</b> (Risk Evaluation and Control)</p>
<p>15. Plan for compulsory Fire Approval for the construction of all types of buildings.</p>
<p>16. Plan for enforcement of Fire Approvals as per the Provisions contained in National Building Code 2005.</p>
<p>17. Plan how data of all fire approvals are maintained in the headquarters or at the central data setup.</p>
<p>18. Plan for introducing and enforcing Development Control Rules of the city.</p>

19. The details of Potential Fire Risk in the City

SL.	particulars	Nos.	
		Residential	Non-Residential
1.	<b>Buildings</b>		
	Upto 15 Meters		
	15 to upto 24 Meters		
	Above 24 to upto 36 Meters		
	Above 36 to upto 45 Meters		
	Above 45 to upto 60 Meters		
	Above 60 to upto 75 Meters		
	Above 75 to upto 100 Meters		
	Above 100 to upto 150 Meters		
	Above 150 Meters above.		
2.	Industrial Area / Chemical Zone		
3.	Cinema Halls/ Malls/ Drama Theatres		
4.	Public Gathering Places		
5.	Hazards storage		
6.	Pilgrims Area ( Floating Population )		
7.	Exhibition/ Public Function Grounds where permission for erecting pendals for circus or any other religious / social functions are granted.		
8.	Other (Please give details)		

Note:- All building should be sub-classified on the basis of following classification as per Part 4 of NBC 2005:

**A) Residential Buildings**

- a) Lodging or Rooming Houses
- b) One or Two Family private Dwelling
- c) Dormitories
- d) Apartment Houses (Flat)
- e) Hotels
- f) Hotels (Starred)

**B) Educational Buildings**

- a) School upto Senior Secondary Level
- b) All Other Training Institutes

**C) Institutional Buildings**

- a) Hospitals & Sanatoria
- b) Custodial Institutions
- c) Penal & Mental Institutions

**D) Group D Assembly Buildings**

**E) Group E Business Buildings**

**F) Group F Mercantile Buildings**

**G) Group G Industrial Buildings**

**H) Group H Storage Buildings**

**I) Group J Hazardous Buildings**

**20. Road Map of the City with the following details :**

- a) Any major National Highway passing though City
- b) Any State Highway passing though City
- c) Any Tunnels in the City
- d) Major Bridges in the City
- e) Accident prone patches
- f) Roads in Hilly Areas or Hilly/Mountain Area in the City or near City
- g) and other related information

**21. Railway Network**

- a) Mail/Express Train main stations
- b) Local Train stations
- c) Metro train stations
- d) Underground Metro stations
- e) Sky Bus
- f) Mono Rail

**22. Airport**

- a) Domestic
- b) International
- c) Cargo
- d) Helipad
- e) Air force Airbase

**23. Sea / River Port**

- a) Passenger Jetties
- b) Container Jetties
- c) Bulk Material Handling Jetties
- d) Petroleum Products Handling Jetties
- e) Chemical & Hazardous Goods Handling Jetties
- f) Fishing Jetties
- g) Ship Breaking Areas
- h) Ship Building Docks
- i) Naval Base

**24. Vital Installations in the City**

- a) Secretariat
- b) Legislation Assembly
- c) Bank Headquarters
- d) Headquarters of major Government and Semi Government Organisations
- e) Atomic Power Station
- f) Chemical Factories
- g) Fertiliser Plants
- h) Major Hazardous Units
- i) Cross Country Pipelines
- j) Petroleum Oil Companies like Refinery, Bulk Storages Depot,
- k) Petroleum & Flammable Gas, LPG filling Stations
- l) Domestic Gas Pipe Network
- m) Cylinder Gas Storage-outlets
- n) and such other points

25. Temporary Structures such as Exhibition Halls, Circus tent, Pendants erected for religious activities.

26. Dilapidated & Unsafe Buildings in the City.
27. Unorganised Houses like Juggi Zopadi & Slum Area.
28. Details of other hazards that exist in the city and plans for response and mitigation accordingly. Hazards like Geological, Metrological, Biological, Human Caused, International and Technological.
<p><b>A. Geological Hazards Associated with City :</b></p> <ul style="list-style-type: none"> <li>a) Earthquake</li> <li>b) Tsunami</li> <li>c) Landslide, Mudslide, Subsidence</li> <li>d) Glacier, Iceberg</li> </ul>
<p><b>B. Meteorological Hazards Associated with City :</b></p> <ul style="list-style-type: none"> <li>a) Flood, Flash Flood, Tidal Surge</li> <li>b) Drought</li> <li>c) Fire ( Forest, range, urban, wild land</li> <li>d) Snow, Ice, Hail, Avalanche</li> <li>e) Windstorm, tropical, cyclone, hurricane, tornado, water spout, dust/ sand storm.</li> <li>f) Extreme temperatures ( Heat, cold )</li> <li>g) Lightning strikes</li> <li>h) Famine</li> <li>i) Geomagnetic storm</li> </ul>
<p><b>C. Biological Hazards Associated With City :</b></p> <ul style="list-style-type: none"> <li>a) Emerging diseases that impact human or animal ( Swine flu, Malaria, Birds flu, Plague, Smallpox , Anthrax, Foot &amp; Mouth Disease.</li> <li>b) Animal or Insect infestation or damage.</li> </ul>
<p><b>D. Human Caused events such as the following :-</b></p> <p><b>Accidental</b></p> <ul style="list-style-type: none"> <li>i. Hazardous material ( explosive, flammable liquid, flammable gas, flammable solid, oxidizers, poison, radiological, corrosive ) spill or release.</li> <li>ii. Explosion / fire</li> </ul>

- iii. Transportation accident
- iv. Building / structure collapse
- v. Energy / power/ / utility failure
- vi. Fuel/ resource shortage
- vii. Air/ water pollution, contamination
- viii. Water control structure/ dam/ lever failure
- ix. Financial issues (economical depression, inflation, financial system collapse)
- x. Communication system interruptions
- xi. Misinformation
- xii. and any other

**Intentional**

**(assessments of the following threats and plan of the action to meet the situation arising out of)**

- i. Terrorism ( explosive, chemical, biological, radiological, nuclear, cyber )
- ii. Sabotage
- iii. Civil disturbance, public unrest, mass hysteria, riot
- iv. Enemy attack, war
- v. Insurrection
- vi. Strike or labour dispute
- vii. Disinformation
- viii. Criminal activity ( vandalism, arson, theft, fraud, embezzlement , data theft )
- ix. Electromagnetic pulse
- x. Physical or information security breach
- xi. Workplace violence
- xii. Product defect or contamination
- xiii. Harassment
- xiv. Discrimination
- xv. And any other

**Possibility of Technological Caused events that can be unrelated to natural or human caused events, such as:**

- a) Central computer, mainframe, software, or application ( internal /

- external)
- b) Ancillary support equipment
- c) Telecommunications
- d) Energy / power / utility.
- e) And any other

9. Collect details and Analyses of Fire & Rescue Calls of the last five years to Draw a Probability of Hazards.

SL.		Year	Year	Year	Year	Year
1.	Total No. of Fire & Rescue Calls					
	a) No. of Fire Calls					
	b) No. Rescue Calls					
	c) No. of Gas Leaks					
	d) Building Collapse					
	e) Hazards Material calls					
	f) Animal Rescue Calls					
	g) Other calls					
2.	No. of Lives Saved					
3.	No. of Lives Lost					
4.	No. of Injured					
5.	Property Saved (Rs. In Lakhs)					
6.	Property Lost (Rs. In Lakhs)					

30. Analysis of probable timing of Incidents

SL.		Year	Year	Year	Year	Year
A	Nos. of Fire/Rescue Calls received from 7000 hrs to 1900					
B	Nos. of Fire/Rescue Calls received from 1900 hrs to 7000					

### **C Planning, Resource Management & Incident Management**

( Mutual Aid/ Assistance, Emergency Response and Operations, Developing and Implementing emergency response plan & procedures)

31. Disaster Management Plan of the city and the responsibilities of the fire services there in.
32. Plan for availing Mutual Aid with any Central or other State Government Authority for conducting fire & rescue operations. Please provide details
33. Collect all on site and off site Disaster Management Plans for all vital installations, buildings and industrial plants in the jurisdiction and the role of Fire Services in them.

34. Addresses of Fire Stations which can be requested to help.

SL.	Name of Fire Station	Type of Construction of Fire Station i.e. RCC/Metal Shade/Temporary Shade	Address	Telephone No.	Fax No.

35. Details of Fire and Rescue Appliances made available in Fire Stations

SL.	Name of Fire Station	Number of Water Tenders	Number of Rescue Tenders	Number of Ladders i.e. TTL/ALP's	Other fire or rescue Appliances

36. Summary of Fire and Emergency Service

SL.	Type of Vehicles	Nos.	
7.	Number of Fire Stations		
8.	Water Tenders		
9.	Rescue Tenders		
10.	Advance Emergency Rescue Tenders		
11.	Flood & Rescue Tenders		
12.	Hazmat Vans		
13.	Turn Table Ladders		
14.	Hydraulic Platforms		
15.	DCP Tenders		
16.	Foam Tenders		
17.	Smoke Blowers		
18.	Control Post Vans		
19.	Water Tankers		
20.	Ambulances		
21.	Cars		
22.	Jeeps		
23.	High Pressure Portable Pumps		
24.	Portable Pumps		
25.	Breathing Apparatus Sets		
26.	Flood rescue boats		
27.	Life jackets		
28.	Details of others Appliances & Equipment		

37. Detailed address and telephone numbers if any of all the personnel in the Fire Station.

38. Plan for day to day training requirements of the station personnel like training ground, drill tower, etc.

**42. Details of Officers & Staff attached to Fire & Emergency Service:**

<b>SL.</b>	<b>Designation</b>	<b>Name</b>	<b>Office Address</b>	<b>Contact Details</b>
1.	Director			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
2.	Chief Fire Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
3.	Dy. Director/ Dy. Chief Fire Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
4.	Asst. Director/Divisional Fire Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
5.	Asst. Divisional Fire Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
6.	Station Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.:

				E Mail:
7.	Assistant Station Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
8.	Sub-Officer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
9.	Leading Fireman/Rescuer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
10.	Driver Operator			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
11.	Driver			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
12.	Fireman/Rescuer			Telephone (O): Telephone (R): Mobile No.: Fax No.: E Mail:
13.	Others (Specify			Telephone (O):

	designation)			Telephone (R): Mobile No.: Fax No.: E Mail:
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<b>D Communication, Warning, Operational Procedures and Decision Support System</b>
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This should have details of the types of communication available – Warless, UHF, VHF, Internet, Tie up with radio, TV and cable channels, Mobile channels providers, Global Positioning System (GPS), Geographical Information System (GIS) and standard Operating Procedures (SOPs)
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### **Capacity Building**

Capacity building for disaster management has been identified by the 13<sup>th</sup> FC as a critical area and allocated substantial funds to States under this head. These funds should be utilized for training fire personnel also.

## **6.1. Training of Fireman in Fire & Emergency Services**

The role of Fireman in Fire & Emergency Services is to extinguish fire, rescue, trap personnel, medical first aid and also to respond to the various accidents in man-made and natural disasters. The roles cannot be performed until and unless sufficient training is being imparted to the fire service personnel. The types of training, duration etc. are depend upon the type of entry.

### **6.1.1. Type of entry**

Broadly there are two entry levels in Fire & Emergency Services in India; 1) Fire Man Level and 2) Middle Level (Sub Officer, Asstt. Station Officer etc.). In Some states the Fire Services directly recruit Fire Service personnel at the level of Station Officer, Divisional Officer and Chief Fire Officer.

## **6.2. Basic training for Fireman/Leading Fireman/Driver**

The minimum requirement for basic training for fireman / leading Fireman / Driver is 8<sup>th</sup> or 10<sup>th</sup> Pass with Driving License for Heavy Vehicles and 6 months Fireman training as professional qualification.

Immediately after joining the Fire & Emergency Services, every fireman shall require to undergo a basic professional training. A Training Centre for the training is absolutely necessary in every State. The State Government shall provide adequate infrastructure and facilities in the Centre. In case of shortage of faculty, the State

Government may use the services of the experienced and retired Fire Service Officers. The details of curriculum and training programme for Fireman is placed in Annexure-6.

### 6.3. Basic Training for Fireman

The state government or ULBs will ensure the Basic Minimum requirement for the training centre. It must be well equipped with technology friendly equipments, good accommodation facilities and necessary requirement for imparting training. Apart from these details of requirement and infrastructure for a model training center is being placed in Annexure -5 which will be followed by the training center with support of state government or ULBs.

### 6.4. Basic Training for Officers

The basic training for officers is also for 6 months and is conducted at the National Fire Service College, Nagpur, Maharashtra. The curriculum and training programme for Sub-Officer is placed as **Annexure- 7**

### 6.5. In-service / Promotional Training

Every Fireman/Fire Officer shall require to undergo mandatory in-service / promotional courses to improve his skills and for promotions. The abstract of in service / promotional courses are as follows. The details of the mentioned course is mentioned in Annexure -8 (Leading Fireman Course), Annexure -7 (Sub-Officers Course), Annexure -9 (Station Officer Course), Annexure -10 (Asstt. Div. Officer/Div. Officer)

SL	PROMOTION		TRAINING REQUIRED
	RANK FROM	PROMOTION TO	
1.	Fire Man	Leading Fireman	Leading Fireman Course
2.	Leading Fireman	Sub-Officers	Sub-Officers Course
3.	Sub-Officer	Station Officer	Station Officers Course
4.	Station Officer	Asstt. Div. Officer	Divisional Officers Course
5.	Asstt. Div. Officer	Divisional Officers	

## 6.6. Other specialised training courses for multi-tasking performance

It has been observed that the Fire Services because of their expertise in Rescue and First Aid are regularly called in other emergencies and in disaster situation. In recent 11/9 incident at Hotel Taj, Mumbai the Fire services also played an important role. In order to provide effective and efficient in all crosscutting affairs of disaster (man-made and natural) they must be well trained to perform in all possible situations. Therefore, it is important that they must undergo training in different emergencies and must be sensitized in Medical First Responder, Disaster Response, General Search & Rescue, Fire Fighting First Responder, Hazardous Material First Responder, Weapon of Mass Destruction, Flood Rescue for First Responder, Specialised training on NBC and Hazmat, Incident Response System, Collapsed structure – Search & Rescue, Handling of Road and Rail Accident, Breathing Apparatus, and Fire Prevention in different set-up.

The state government should ensure that the personnel of state Fire and Emergency have trained and efficient to manage any kind of situation

Some of the curriculum of the emergencies as discussed above is given in annexure are as follows in table – 1.

<b>Courses</b>	<b>Curriculum</b>
Medical First Responder Course	Annexure -11
Basic Disaster Response Course	Annexure -12
General Search & Rescue course	Annexure -13
Fire Fighting First Responder Course	Annexure -14
Hazardous Material First Responder course	Annexure -15
Weapon of Mass Destruction Course	Annexure -16
Flood Rescue for First Responder Course	Annexure -17

The course like Specialised Course on NBC and Hazmat, Incident Response System, Collapsed structure – Search & Rescue, Handling of Road and Rail Accident, Breathing Apparatus and Fire Prevention should be developed by the State Training

Institutions and National Fire College, Nagpur. The State government and National Fire College, Nagpur may ask for technical support from the Fire Advisory Council, NDMA and NIDM or any professional bodies for preparation of training materials on the above mentioned course.

# 7

## SUMMARY OF ACTION POINTS

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# ANNEXURE

# LIST OF PARTICIPANTS

# CONTACT US

## Annexure - 2

### SCALE OF EQUIPMENT

#### 4.1 State Headquarters (SHQ) for Fire and Emergencies Services

SL	EQUIPMENTS	SPECIFICATION	AUTH. NOS.
1.	Turn Table Ladder	50 Mtrs.	02 Nos.
2.	Hydraulic Platform	45 Mtrs.	02 Nos.
3.	Hazmat Van	-	02 Nos.
4.	Advance Rescue/ Emergency Tenders	-	02 Nos.
5.	Water Bouser	10,000 Ltrs.	02 Nos.
6.	Hose Laying Tenders	-	02 Nos.
7.	Lighting Van	-	02 Nos.
8.	Control Post Van	-	02 Nos.
9.	Canteen Van	-	02 Nos.
10.	Mobile Workshop for repair of Fire Appliances	-	02 Nos.
11.	Mobile Workshop for telecommunication equipments	-	02 Nos.
12.	Breakdown Van	-	02 Nos.
13.	Disaster Management Equipment Van	-	02 Nos.
14.	High Capacity Pumps		02 Nos.

#### 4.2 Divisional Head Quarter (DHQ) for Fire and Emergencies Services

SL	EQUIPMENTS	SPECIFICATION	AUTH. NOS.
1.	Hydraulic Platform	45 Mtrs.	01 No.
2.	Hazmat Van	-	01 No.

3.	Advance Rescue/ Emergency Tender	-	01 No.
4.	Water Bouser	10,000 Ltrs.	01 No.
5.	Hose Laying Tender	-	01 No.
6.	Lighting Van	-	01 No.
7.	High Capacity Pump		01 No.
8.	Water Tender		02 Nos.
9.	Ambulance		01 No.
10.	Mini Water Tender		02 Nos.
11.	Motor Cycle Based Fire Party		06 Nos.

### 4.3 Fire Stations

SL	EQUIPMENTS	SPECIFICATION	AUTH. NOS.
1.	Water Tender		02 Nos.
2.	Rescue Tender		01 No.
3.	Ambulance		01 No.
4.	Mini Water Tender	Mini	01 Nos.
5.	Motor Cycle Based Fire Party		02 Nos.
6.	Water Bouser	10,000 Ltrs.	01 No.

### 4.4 Water Tender Based on Population

SL	POPULATION	WATER TENDERS
1.	50,000	01 No.
2.	1,00,000	02 Nos.
3.	3,00,000	06 Nos.
4.	* Additional 1 lacs.	01 Nos.

### 4.5 Fire Station

SL	GEOGRAPHICAL AREA	NO. OF FIRE STATION
1.	10.36 Sq. KMs	01 No.

#### **4.6 Divisional Fire Station**

<b>SL</b>	<b>DIVISIONS</b>	<b>NO. OF FIRE STATION</b>
1.	01 Division	08 No.

#### **4.7 Headquarters Fire and Emergency Service**

<b>SL</b>	<b>HQ FIRE STATION</b>	<b>NO. OF HEADQUARTER</b>
1.	Cities with more than 1 million population	01 No.

#### **4.8 Training Centre**

<b>SL</b>	<b>TRAINING CENTRE</b>	<b>NO. OF TRAINING CENTRE</b>
1	Cities with more than 1 million population	01 No.

**MANPOWER****5.1 General Scale**

SL	DESIGNATION	NO. OF POSTS	REMARKS
1.	Director Fire & Emergency Services	01 No.	
2.	Chief Fire Officer	3:1 Ratio	3 DCFO
3.	Deputy Chief Fire Officer (For Divisional)	3:1 Ratio	3 Dy. CFO
4.	Divisional Fire Officer	1:1 Ratio	Each Dist.
5.	Asstt. Dist. Fire Officer	3 Station : 1 (ADFO) Ratio	
6.	Station Officer	1 (FS) : 1(STO)	
7.	Asstt. Station Officer	1 (Shift) : 1 (ASTO)	
8.	Leading Fire Man	1 (Vehicle) : 1 (LFM)	
9.	Fire Man / Driver	6	Please see details below

**5.2 Man Power for various types of Appliances:**

SL	NAME OF APPLIANCE	Asst. Station Officer	Leading Fireman	Fire Man Driver	Total
1	Turn Table Ladder	1	1	2	4
2	Hydraulic Platform	1	1	2	4
3	Hazmat Van	1	1	6	8
4	Advance Rescue/ Emergency Tenders	1	1	6	8
5	Water Bouser	1	1	2	4
6	Hose Laying Tenders	1	1	2	4

7	Lighting Van	1	1	2	4
8	Control Post Van	1	1	2	4
9	Canteen Van	-	-	2	2
10	Mobile Workshop for repair of Fire Appliances (Technical Personnel)	1	1	2	4
11	Mobile Workshop for telecommunication equipments (Technical Personnel)	1	1	2	4
12	Breakdown Van	-	1	2	3
13	Disaster Management Equipment Van	1	1	6	8
14	High Capacity Pumps	1	1	2	4
15	Water Tender	1	1	6	8
16	Rescue Tender	1	1	6	8
17	Ambulance	-	-	2	2
18	Mini Water Tender	-	-	2	2
19	Motor Cycle Based Fire Party	-	-	2	2

### **5.3 Manpower Requirements at Station Level**

The manpower requirements for fire stations varied according to the types of fire fighting appliances to be manned, the number of fire engines at the station, the duty system - continuous or shift duty and the extent of other duties, inspection of hydrant and water resources, type of communication system etc. Based on above factors, the committee recommended the following strength:-

## **[a] Station Officers and Sub-Officers**

The scale of Station Officers and Sub-Officers at Stations should be as under :

<b>Size of Station</b>	<b>Strength of Officers</b>
1 Pump Station	1 Station Officer or 1 Asst. Station Officer
2 Pumps Station	1 Stn. Officer & 1 Asst. Station Officer
3 Pumps Station	1 Stn. Officer & 2 Asst. Station Officer
4 Pumps Station	2 Stn. Officers & 2 Asst. Station Officer
5 Pumps Station	2 Stn. Officers & 3 Asst. Station Officer
6 Pumps Station	2 Stn. Officers & 4 Asst. Station Officer

**Note 1 :** Where the extent of fire risk may justify Asst. Station Officer may be replaced by Station Officers.

**Note 2 :** Reserve Staff :-

- [a] A 50 per cent reserve of total staff of Station Officers and Asst. Station Officer on duty, to be provided for periodical relief to enable the officers to avail 24 hours off after every 48 hours on duty.
- [b] A 10 per cent of the total staff on duty and periodical relief to be provided as training reserve.
- [c] A leave reserve of 15 per cent on the total staff on duty, periodical relief and training reserve to be provided as replacement for all types of leave.

**[b] Leading Fireman**

There should be one Leading Fireman per fire appliance and one for station and outdoor duties at all times.

**[c] Firemen Driver**

The scale of Firemen Driver will be six per fire appliance apart from one fireman for fire-alarm duties, two firemen for hydrant and water resources inspection and one fireman for dispatch duties per station.

**Note 1 :** There should be a reserve of 25 per cent of the total number of leading Firemen and Firemen Driver worked out according to the above scale to serve as Training Reserve and Leave Reserve.

**Note 2 :** Where two shift system is in vogue, the number of Leading Firemen and Firemen Driver will be double.

**Note 3 :** Where three shift system is in vogue, the number of Leading Firemen and Firemen Driver will be three times the scale mentioned above.

**[d] Watch Room Operators**

Four watch room operators for each station to be provided, one to be on duty for every 8 hours and the fourth man to be spared for relief-work. In addition, an overall reserve of 25% for the service as a whole to be provided.

**[e] Clerks**

Where the station functions as an independent unit and has its own cash and store work, one clerk may be provided.

**[f] Sweepers**

This class of employees should be provided at the scale of one per 5000 Sq. Ft. of covered area and one per 7000 Sq. Ft. of open area, subject to a minimum of one at each station.

**[g] Gardeners**

One gardener for every half acre of land required to be maintained as a garden. At places having more than one station where headquarters of city fire brigades exists, the staff required should vary from place to place depending on the strength of the crew.

**CURRICULUM OF BASIC TRAINING OF FIREMAN**

**Oral**

**(i) Chemical Extinguisher**

Types in use and types of fires on which each one can be used ; care and maintenance

**(ii) Ladders**

Types in use with limitations of each : care and maintenance; Duties of each member of crew in standard drills.

**(iii) First Aid**

Treatment in cases of shock, wounds, burns, bleeding, fractures and respiratory failure.

**(iv) Hose and Hose Drills**

Types of delivery and suction hose; construction, care and maintenance; methods of testing, cleaning drying, repairing and slowing; duties of each member of crew in standard drills.

**(v) Foam and Foam Equipment**

Types of foam and foam making appliances and their uses – care and maintenance.

**(vi) Hydrants and Hose Fittings**

Types and sizes of hydrants; hose fittings, like couplings, breachings, collecting heads, branches and nozzles, strainers, stand-pipes; hose wrappers and bandages; hose ramps, branch holders; care and maintenance.

**(vii) Knots and Lines**

Types of lines; methods of testing; care and maintenance. Following 12 knots and their uses :--

- (aa) Overhaul knot or thumb knot.
- (bb) Reef knot
- (cc) Clove hitch
- (dd) Rolling hitch
- (ee) Round turn and two half hitches
- (ff) Single sheet bend

- (gg) Sheep shank
- (hh) Cat's Paw
- (ii) Bow line
- (jj) Running bow line
- (kk) Bow line on the bight
- (ll) Chair knot;

**(viii) Pumps and Pump Drills**

Types of pumps and priming systems; identification of parts; care and maintenance; duties of each member of crew in standard drills.

**(ix) Practical Firemanship**

Method of "entry" into and searching a building or locating a fire; precautions to be observed when working in smoke laden places.

**(x) Small Gear**

Uses of special gear, like door openers, persuaders, braking-in-tools, axes, preventers, rakes, scoops, cutting shears, hand -pumps, etc.

**(xi) Water Room Procedure**

Method of dealing with calls to fire and other emergencies; standard messages.

**(xii) Water Supplies and Relays**

Types of water supplies and essential requirements for making their use for fire fighting; tapping of water mains; relay systems by collector and series pumping; normal relay distances.

**Practical**

**(i) Breathing Apparatus**

Harnessing a breathing set.

**(ii) Chemical Extinguishers**

Method of operating and recharging after use.

**(iii) Ladders**

Ascending and descending; handling hook ladder with pompler belt and performing one man or two men drill.

**(iv) First Aid**

Bandaging at different parts of body; artificial respiration.

**(v) Hydrant, Hose and Hose Drills**

Operating hydrants; lifting, laying; making-up, adding replacing or removing of hose length, carrying hose lines to upper floors or on ladders.

**(vi) Knots and Lines**

Practical tying up of the following knots :--

- (aa) Overhaul knot or thumb knot.
- (bb) Reef knot
- (cc) Clove hitch
- (dd) Rolling hitch
- (ee) Round turn and two half hitches
- (ff) Single sheet bend
- (gg) Sheep shank
- (hh) Cat's Paw
- (ii) Bow line
- (jj) Running bow line
- (kk) Bow line on the bight
- (ll) Chair knot;

**(vii) Pumps**

Operation of pumps with different priming systems.

**(viii) Rescue Drills**

Picking-up, lowering and carrying down insensible persons by Fireman's lift and lines rescue,--

**(ix) Squad Drills**

Performing squad drill, marching in step, turning right, left and about, turning in inclination and forming squad.

**CURRICULUM FOR PROMOTION TO LEADING FIREMAN**

**(I) Breathing Apparatus and Resuscitation**

Written and/or oral -- Types in use with their limitation circumstances in which sets are to be used – conditions when resuscitation is necessary standard test.

Practical demonstration -- Practical demonstration in harnessing a breathing set or using a resuscitation apparatus.

**(ii) Chemical Extinguishers**

Written and/or oral -- Types of extinguishers in use and fires on which each one can be used; advantages and disadvantages and general methods of maintenance; standard tests.

Practical demonstration -- Method of operation; recharging after use.

**(iii) Escape Ladders, Extension Ladders and Hook Ladders, with Drills**

Written and/or oral -- Types in use with their limitation care and maintenance; duties of each member of crew in performance of standard drills; standard tests;

Practical demonstration -- Slipping and pitching; handling of hook ladders with pompier belt and ascending and descending on ladder.

**(iv) First Aid**

Written and/or oral -- Method of approach and subsequent treatment in cases of shock, wounds, burns, bleeding, fractures and respiration failures

Practical demonstration -- Methods of bandaging at different parts of body and artificial respiration.

**(v) Foam and Foam Equipment**

Written and/or oral -- Types of foam making appliances in use with their limitations; circumstances, when these can be used; care and maintenance; standard tests.

Practical demonstration -- Practical demonstration on how to use each equipment.

**(vi) Hose and Hose Drills**

Written and/or oral -- Types of delivery and suction hose in use its construction with care and maintenance; method of testing, cleaning, drying, repairing

and stowing; duties of each member of crew in performance of standard three-men and four-men drills; standard tests.

Practical demonstration -- Lifting, laying, making-up, adding, replacing or removing of hose as also carrying lines on upper floors on ladder.

**(vii) Hydrants and Hose Fittings**

Written and/or oral -- Types of hydrants in use with sizes and construction of outlets; hose fittings, like couplings, breeching, collecting heads, branches with different types of nozzles, strainers, standpipes, hose wrappers, hose bandages, hose ramps, branch holders and their uses; standard test of hydrants.

Practical demonstration -- Operation of hydrants and different hose fittings.

**(viii) Knots and lines**

Written and/or oral -- Types of lines in use, method of testing and different uses to which different knots can be put to standard test.

Practical demonstration -- Practical tying up of various knots.

**(ix) Pumps and Pump Drills**

Written and/or oral -- Types of pumps with priming systems in use; advantages and disadvantages; duties of each member of crew in case of standard pump drill.

Practical demonstration -- Operation of pumps and standard pump drill.

**(x) Practical fireman ship**

Written and/or oral -- Methods of entry into and searching a building, locating a fire and precautions to be observed when working in smoke laden building.

**(xi) Rescue Drills**

Practical demonstration -- Picking up, lowering and carrying down insensible persons; rescue by fireman's lift and line rescue.

**(xii) Small Gear**

Written and/or oral -- Uses of special small gear, like door openers, persuaders, bracking-in-tools, cutting plants; rescue gear; jacks and pulleys; axes and preventers, etc.

- (xiii) **Squad Drill**  
 Practical demonstration - Conducting practical squad drill with formation of squad, marching in step, turning with right and left inclination methods of March-past and presentation of parades.
- (xiv) **Topography**  
 Written and/or oral -- Knowledge of the layout of the town/city with names of prominent localities, main roads, connecting such localities, names of different bazaars and important lanes; general spread of the fire hazards in the area served by the Fire Station concerned.
- (xv) **Watch room procedure**  
 Written and/or oral -- Functions of watchroom; methods of keeping records of incoming and outgoing messages; mobilizing procedure; method of dealing with fire and emergency calls; standard messages.
- (xvi) **Water problems**  
 Written and/or oral -- Types of water supplies, essential requirements for making their use for fighting pressures in water mains, capacities of pumps for tapping water mains.
- (xvii) **Water relay**  
 Written and/or oral -- Meaning of collector and series pumping; normal relay distance; method of detecting disturbances in relay hose-lines.

**(c) DRAFT RULES FOR PROMOTION**

(i) All promotions to different ranks in the Fire services up to the rank of Divisional Officer, shall be made out of the candidates who are eligible in all respects having successfully passed the appropriate examination for such promotion and not otherwise.

(ii) For being termed as “successful” at any examination, the candidate shall have to score 50 per cent marks and above of the total marks.

(iii) Seniority amongst the passes shall be considered along with seniority in service and those who pass in previous years shall be termed as seniors to those who pass in subsequent years for promotion. Candidates to be sponsored for training at the Regional/State Training Centres or National Fire Service College, should be drafted according to seniority, as far as possible, from amongst those eligible for respective courses.

(iv) Only in exceptional and very rare cases shall the appointing authority have the discretion of waiving the condition of passing a promotion examination in case of an otherwise eligible candidate, if circumstances then prevailing warrant such consideration. In such a case, the appointing

authority may preferably arrange selection for appointment by interviewing candidates by a Board of not less than three officers.

(v) For promotion to the ranks of Leading Firemen, the eligible candidates must pass a departmental written and oral and practical examination of the standard as laid down in the syllabus above. This examination should be conducted by a Board of officers having as Asstt. Divisional Officers or a Senior Station Officer with not less than 5 years' service as Chairman and two Station Officers or Sub Officers with not less than years' service as members.

**CURRICULUM FOR PROMOTION TO STATION OFFICER**

**(i) Breathing apparatus**

Written --

Types in use with brief description of working principles; circumstances in which each type can be used; care and maintenance.

Oral and practical --

Harnessing and actual use in smoke or gas laden chamber and standard test.

**(ii) Building construction**

Written --

Types of buildings; properties of various building materials and their behaviour in heat and fire, different construction of walls, roofs, floors, stairs, hearths and chimneys with flues, doors, windows, etc; their advantages and disadvantages in relation to fire risk. Placing of lifts, stairs, fire escapes, etc. in relation to occupancies.

**(iii) Chemical extinguisher**

Written --

Types in use with constructional details working principles with limitations of use their advantages and disadvantages; care and maintenance.

Oral and practical --

Operational working; procedure of recharging after discharge and standard test.

**(iv) Chemistry and Heat**

Written --

Principles of chemistry; heat and combustion; fundamental chemical reactions with risk involved; risks with important chemical compounds and volatile liquids.

Oral and practical --

Laboratory experiments of production of heat, combustion and evolution of gases due to chemical reactions.

**(v) Discipline**

Written --

General rules of discipline; its importance in Fire Service and how it can be maintained; procedures in dealing with disciplinary matters.

**(vi) Electricity**

Written --

Principles of electricity and fire risks in relation to generation, distribution, domestic and industrial electrical hazards.

Oral and practical -- Creation of sparks due to static charge, short circuits and leakages.

**(vii) Escape ladder (optional if not in use)**

Written -- Types in use with brief description of constructions and working with appropriate identification of parts; care and maintenance.

Oral and practical -- Standard drills in slipping, pitching, bridging, correct methods of ascending and descending; standard tests.

**(viii) Exercises (situation and tactical)**

Oral and practical -- Exercises in practical fire fighting, with fire ground conditions incorporating various fire drills using different fire appliances and ladders and message work; night exercises.

**(ix) Fire Service Administration**

Written -- Fire Station administration; maintenance of records of hose, occurrences, watchroom work, fire engines and other appliances; preparation of report of fires; special services and periodical returns.

**(x) First Aid**

Written -- General procedure; treatment of shock, wounds, burns and scalds, haemorrhage, fractures, etc. method of artificial respiration and bandaging. Oral and practical -- Demonstration of methods of treatment; artificial respiration and bandaging.

**(xi) Fixed Fire Fighting Installation**

Written -- Systems of Dry risers, rising mains, internal hydrants, fire resisting doors and shutters and their uses.

**(xii) Foam and foam equipment**

Written -- Types and composition of foam and their properties, expansion ratio, stability, methods of creating mechanical and chemical foam with advantages and disadvantages. Construction and working principles of foam making equipment like foam branches, multiple jet and inline inductors, foam pourers and towers etc; care and maintenance.

Oral and practical -- Standard drills with foam equipment and standard tests.

<b>(xiii) Gas Fires (optional)</b>		
Written --		Properties of different gases, the hazards relating to gases, hazards of domestic gas installations.
<b>(xiv) Hook ladder</b>		
Written --		Constructional features; identification of parts; care and maintenance of ladder and belt.
Oral and practical --		One man and/two men standard drills to 4th floor with hose and rescue lines; standard tests.
<b>(xv) Hose</b>		
Written --		Construction of delivery and suction hose; operational misuse; methods of testing; cleaning, drying and repairing, care and maintenance.
Oral and practical --		Repairing and darning of hose, standard tests.
<b>(xvi) Hose Drills</b>		
Oral and practical --		Three and four men standard drills; carrying, running, laying and making up of hose; adding, removing, replacing and raising to upper floors.
<b>(xvii) Hose fittings</b>		
Written --		Construction of delivery and suction couplings, branches, nozzles, spray, diffuser, stream form and revolving branches, basement sprays, collecting and dividing breechings, suction collection heads, etc; their use, care and maintenance.
Oral and practical --		Demonstration with each type of hose fitting.
<b>(xviii) Hydrants</b>		
Written --		Construction of different types of hydrants, sizes of outlets and outlet fittings; methods of connecting to fire pumps, marking and hydrant pits and covers; care and maintenance.
<b>(xix) Internal combustion engines</b>		
Written --		Principles of Internal combustion engine; types of ignition systems; electrical system; use of fuel, care and maintenance.
Oral and practical --		Demonstration of actual moving parts in dismantled i.e. engines.

**(xx) Knots and Lines**

Written --

Types and composition of lines; working load, braking load and testing load; various knots and their uses; care and maintenance.

Oral and practical --

Tying of various knots; splicing and whipping of lines; standard tests.

**(xxi) Ladders**

Written --

Types in use with brief description of construction and working with appropriate identification of parts; care and maintenance.

Oral and practical --

Standard drills in slipping and pitching; correct methods of ascending and descending; standard tests.

**(xxii) Physical & Squad Drills**

Oral and practical --

Conduct of squad and physical drills with appropriate sequence and words of command; methods of presentation of parades and march past.

**(xxiii) Pumps**

Written --

Types use with constructional details and working principles; types of primers and methods of priming; testing and fault finding; care and maintenance.

Oral and practical --

Demonstration of operating pumps of different types and priming systems, from hydrants and from an open source of water supply; standard tests.

**(xxiv) Pump Drills**

Oral and practical --

Standard drills with hose; hose reels; foam making equipments and places including upper floors; visual signals and whistle signals.

**(xxv) Plan Reading (optional)**

Written --

Importance of plan reading; methods of reading with explanation of common symbols in use.

**(xxvi) Practical Firemanship**

Written --

Qualities of a fireman; his important duties at Fire Station and Fire Ground.

Oral and practical --

Methods of entry, rescue, roomsearching, working in darkness and in thick smoke; line signals.

<b>(xxvii) Rescue drills</b>	
Oral and practical --	Picking up, lowering and carrying insensible persons with Fireman's life and lines rescues.
<b>(xxviii) Refrigeration (optional)</b>	
Written --	Principles of refrigeration; properties and hazards of different refrigerants and actions to be taken in case of leakage.
<b>(xxix) Resuscitation</b>	
Written --	Description of resuscitation sets, methods of working and circumstances when used; care and maintenance.
Oral and practical --	Demonstration in use of resuscitation set.
<b>(xxx) Rural Fires</b>	
Written --	Causes of rural fires; precautions to be taken in rural areas; methods of fighting rural fires.
<b>(xxxi) Salvage</b>	
Written --	Meaning of salvage; how fire loss can be reduced by salvage; salvage equipments and their uses.
Oral and practical --	Demonstration in salvage sheeting, indoor and outdoor chutes, drawing and mopping.
<b>(xxxii) Small Gear</b>	
Written --	Types and uses of breaking in tools, door-openers, persuaders, bolt croppers, rescue gear, jacks and pulley blocks, axes, preventers, rakes, saws, etc.
Oral and practical --	Demonstration in the operation of small gear.
<b>(xxxiii) Special appliances</b>	
Written --	Brief description and working principles of oxy-acetylene cutting plant, blower and exhaustor machine, portable lighting sets, etc; their uses and precautions to be taken.
Oral and practical --	Operation of special gear.
<b>(xxxiv) Special Services</b>	
Written --	Rescue of trapped persons from sewers, lifts, collapsed buildings and drowning; rescue of animals; methods to be used and precautions to be taken.

**(xxxv) Sprinklers, Drenchers and CO2 Installations**

Written --

Brief description and working principles of 'wet', 'dry' and 'alternate' systems of sprinklers and drenchers, CO2 methylbromide etc; installation; methods of spacing locating and uses, care and maintenance.

**(xxxvi) Turn Table Ladders (Optional, if not in use)**

Written --

Description and working principles of turn table ladders their advantages, situations when these can be used and precautions to be taken when in use; care and maintenance.

Oral and practical --

Demonstration of operating the ladder with varying loads, uneven surfaces and weather conditions, standard tests.

**(xxxvii) Watch Room Procedure**

Written --

Functions of watch room; method of working with fire alarm and telephone systems; fire around and control room messages; mobilizing procedure; maintenance of records, etc.

Oral and practical --

Demonstration of receiving and transmitting messages, log keeping and mobilization of Fire Force in major incidents.

**(xxxviii) Water Problems**

Written --

Study of pressure; heads, rate of flow, capacity and friction loss in relation to behaviour of water under pressure; discharge pressures of pumps and different nozzles.

Oral and practical --

Demonstration of discharge of water from different nozzles at varying pressures; effect of jet and spray and length of throw.

**(xxxix) Water Supply**

Written --

Principles of 'series' and 'collector' pumping; methods of arranging relays.

Oral and practical --

Demonstration of 'series' and 'collector' pumping.

**(xl) Lecturette (optional – For Instructors)**

Written --

Methods of imparting instructions and conducting training on various subjects on fire fighting, fire prevention, etc.

**(xli) Special Risks**

**Group I**

**Hazardous storages in warehouses**

Written -- Warehouses and storage sheds for hazardous goods and their construction from fire risk point of view, methods of storage and precautions to be taken.

**Group II**

**Ships and Dock Risks**

Written -- Principles of nautical stability of floating objects and safety limits; causes of fires in ships and methods of fire fighting.

**Group III**

**Aircraft fires and rescue**

Written -- Construction of aircraft; locations, emergency exits, fuel tanks, batteries, etc; usual causes of fires in aircraft; methods of rescue and of fire fighting.

## SYLLABUS FOR BASIC DISASTER RESPONSE COURSE FOR FIRST RESPONDERS

**OBJECTIVES:** To train the participants in Basic Disaster Response Mechanism to be able to perform First response activities in an emergency situation.

**DURATION:** 40 Working days (5 days per week @ 6 hours per day)

Sl. No.	Subject	No. of Hours			Total Hours
		L	D	P	
1.	Definition, Types of Disasters, General Effect of Disasters, Associated characteristics, Associated problems of Disasters, Counter measures & Grouping of Response measures.	4	-	-	4
2.	Dovetailing of Disaster response functions with the existing agencies at Central, State and Local level. Latest trend in Disaster Management.	4	-	-	4
3.	Role of various agencies such as Fire Services, Police, Para-military, Defence Services, Home Guards, Civil Defence volunteers and NGOs' etc. as First Responders in Disaster Response operations.	4	-	-	4
4.	Organisation structure, role and function of disaster management response, terms for different scenaria such as Search & Rescue, Flood Rescue, First Aid and medical care, weapons of mass destructions, Chemical emergency, fire fighting, communication, logistic and documentation etc.	6	-	-	6
5.	Incident command system (ICS), definition, organization of ICS, Incident Commander, Incident, Command Post, Scope of operation.	4	-	-	4
6.	Emergency Control Room, Control, Co-ordination, response and relief operation. Working management of Control Room and Communication system in the disaster affected area.	2	4	4	10
7.	<u>First Responders Kit/Equipments</u> : Personnel Protective Equipments, Team Kit etc.	1	1	3	5
8.	<u>Communication for First Responders</u> : Handling and operation of communication equipments such as line communication, Radio communication, Satellite communication, Ham Radio etc.	2	1	4	7
9.	<u>First Aid and Medical Care</u> : Physiology, Circulatory system, Respiratory system, Fractures, Wound, Shock, Bandages & Transportation of Casualties.	6	6	18	30

10.	<u>Rescue Techniques</u> : Knots and lashings, Emergency methods of rescue, rescue equipments, ladders, pulley, blocks tackles, rescue from height.	6	6	18	30
11.	<u>Chemical Emergency Handling Techniques</u> : Classification and Identification of chemicals, Introduction to chemical threats, Hazards associated with chemicals and their handlings.	4	6	10	20
12.	<u>Fire Fighting Techniques</u> : Theory of combustion, different types of fire, extinguishers and application areas, B.A. Set, Pump and Pump operation, familiarization with fire fighting equipments and appliances, foam & foam making equipments, familiarization with fire detection and suppression system.	8	6	16	30
13.	<u>Handling of weapons of (WMD) mass destruction emergencies</u> : Introduction to WMD, safety measures from WMD incidents, types and characteristics of WMD agents.	6	6	18	30
14.	<u>Flood Rescue</u> : Flood and their causes, name and parts of Boat, Rules of river and words of commands, Flood rescue equipments.	3	3	8	14
15.	<u>Law &amp; Legislation</u> : Law & Legislation in India and abroad	2	-	-	2
16.	Course Introduction	2	-	-	2
17.	Familiarisation of tools, equipments, accessories	1	3	8	12
18.	Unit Test	3	-	-	3
19.	Pre final exercise & debriefing	-	-	3	3
20.	Final Exercise	-	-	3	3
21.	Opening & closing of course	2	-	-	2
22.	Daily course evaluation	10	-	-	10
23.	Films	-	5	-	5
	<b>Total</b>	<b>80</b>	<b>47</b>	<b>113</b>	<b>240</b>

## SYLLABUS FOR MEDICAL FIRST RESPONDERS COURSE

**OBJECTIVES:** To train the first Responders of various organizations in response action to be undertaken during and post- Disaster phases in first-aid and medical case.

**DURATION:** 20 Working days (5 days per week @ 6 hours per day)

Sl. No.	Subject	No. of Hours			Total Hours
		L	D	P	
1.	<b>Medical First Responder</b> Definition of MFR, Organisational Composition, Duties & Responsibilities of MFR, Definition of Medical Health, Service Scheme in India, Personal protection equipment, Used during Patient, Assessment & Pre-hospital Treatment.	1	1	1	3
2.	<b>Incident</b> Information to be obtained when receiving a Call for Assistance, Factors to consider for responding a call, steps to assess the scene, Information to be included in the initial report. Steps to secure the Scene, Tools used to gain access to the victim under Different conditions.	1	1	2	4
3.	<b>Human Body &amp; Basic Systems</b> Define anatomical position, Identify and describe the location of wound, Identify five regions of body, Body cavities & the organs they contain, Abdominal Quadrants, Identify organs located in each quadrant.	2	1	-	3
4.	<b>Patient Assessment</b> - Procedures a medical first responder should complete when arriving at the scene, six phases of patient Assessment, Six steps of initial assessment, Complete Physical examination of Patient.	1	1	2	4

5.	<p><b>Wounds Bleeding &amp; Shock</b>  Methods of controlling external bleeding, signs and symptoms of shock, Pre-hospital treatment of Shock, Pre-hospital treatment of Internal bleeding, Steps to treat a wound (Open and Closed Wounds), Pre-hospital treatment for eye, ear, nose and mouth Injuries, Abdominal &amp; Genital injuries, Use of the Bandage for controlling bleeding.</p> <p><b>Pre-hospital treatment for:</b>  (a) Impaled object in ear or cheek  (b) Bleeding neck injuries  (c) Avulsions  (d) Amputations</p>	3	1	6	10
6.	<p><b>Fracture, Dislocation and Sprain</b>  Definition of open and closed fracture signs and symptoms of Fracture, Definition of Dislocation, Sprain and Strain, Reasons for Immobilization of fracture, sprain and dislocation, Pre-hospital Treatment for fracture and sprain of extremities hips and pelvis, Signs and symptoms of skull fracture, spinal injury and Chest. Injury and their pre-hospital treatment.</p>	1	1	2	4
7.	<p><b>Burns &amp; Scalds</b>  Matching of signs &amp; symptoms of three types of burns according to their depth, Rule of Nines to determine, Total Body Surface Area, Pre-hospital treatment of chemical &amp; Electrical burns.</p>	1	1	2	4
8.	<p><b>Poisoning</b>  Signs and symptoms of ingested poisons, injected poisons, Inhaled poisons, Absorbed poisons and their pre-hospital treatment, Signs and symptoms of alcohol poisoning and pre-hospital treatment.</p>	2	-	-	2
9.	<p><b>Artificial Respiration, CPR and FBAO</b>  Artificial respirations methods, Recognising foreign body airway obstruction, managing FBAO, Abdominal Thrusts, Chest Thrusts, CPR Techniques.</p>	4	4	10	18
10.	<p><b>Emergency methods of moving victims</b>  Different emergency methods of moving patient, techniques for immobilizing a patient, using backboards, situations that might require to make emergency move of victims.</p>	2	2	6	10
11.	<p><b>Triage</b>  Categories of triage with their associated colours, Bench Mark of START system of triage.</p>	1	1	3	5
12.	Transportation of Casualties and Stretcher Drill	½	1	2½	4

13.	Use and Practice of Triangular and Roller Bandages	½	1½	3	4
14.	Course Introduction	2	-	-	2
15.	Familiarisation of tools, equipments, accessories	1	3	8	12
16.	Unt Test	3	-	-	3
17.	Pre-final exercise & debriefing	-	-	3	3
18.	Final exercise	-	-	3	3
19.	Opening & closing of course	2	-	-	2
20.	Daily course evaluation	10	-	-	10
21.	Films	-	5	-	5
	<b>Total</b>	<b>39</b>	<b>25½</b>	<b>55½</b>	<b>120</b>

## Annexure - 13

# SYLLABUS FOR SEARCH & RESCUE FOR FIRST RESPONDERS

**OBJECTIVES:** To train the participants in search and Rescue Technical to be able to perform First response activities in an emergency situation.

**DURATION:** 20 Working days (5 days per week @ 6 hours per day)

Sl. No.	Subject	No. of Hours			Total Hours
		L	D	P	
1.	Disaster & Associated Problems	1	-	-	1
2.	Composition & function of Search and Rescue Team	1	-	-	1
3.	Operational Safety	-	2	-	2
4.	Utility of Knots & Lashings	1	1	3	5
5.	Construction materials, structures and damages types	-	2	-	2
6.	Use of ladder in rescue work	1	1	2	4
7.	Search & location techniques	1	1	2	4
8.	Structural Triage & marking system	1	1	7	9
9.	Handling & transportation of casualties	1	1	7	9
10.	Derrick, sheers & Gyn.	1	1	2	4
11.	Shoring types, construction & Safety precautions	1	1	3	5
12.	Preparation of various types of rope bridges, mono lines and commando bridge.	1	1	3	5
13.	Hold fasts and Anchorages, types & use	1	1	3	5
14.	Use of ladder in rescue work & rescue from high rise buildings, learning ladder and hinge method, lowering stretcher on the ropes, lowering stretcher on one or two ladders, two/four point method of rescue from voids, flying fex method of rescue, Chute method of rescue.	1	2	5	8
15.	Use of B.A. set	1	1	2	4
16.	Use of oxy-acetylene set	½	½	1	2
17.	Use of pulley blocks & tackles	½	½	1	2
18.	Rescue strategies and techniques	1	1	4	6
19.	Lifting and stabilizing the load	1	1	2	4
20.	Method of rescue of trapped person from lift, sewer, well and damaged building	1	1	2	4
21.	Course introduction	2	--	--	2
22.	Familiarisation of tools, equipments, accessories	1	3	8	12
23.	Unit Test	3	--	--	3
24.	Pre final exercise & debriefing	--	--	3	3

25.	Final exercise	--	--	3	3
26.	Opening & closing o course	2	--	--	2
27.	Daily course evaluation	10	--	--	10
28.	Films	--	5	--	5
	<b>Total:</b>	<b>39</b>	<b>24</b>	<b>57</b>	<b>120</b>

**SYLLABUS FOR FIRE FIGHTING COURSE FOR  
FIRST RESPONDERS**

**OBJECTIVES:** To train the participants in Fire Fighting operations to First response activities in an emergency situation.

**DURATION:** 20 Working days (5 days per week @ 6 hours per day)

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Sl.No.	Subject	No. of Hours	Total Hours		
1.	<u>Theory of Combustion:</u> Factors governing rate of combustion spontaneous ignition, heat, energy its characteristics. Co-efficient of linear. Expansion, Transmission of heat, latent Heat, Inflammable liquids, Definitions of Specific gravity, vapour density, inflammable Limits, flash point and ignition	2	-	1	2
2.	Building Construction: Definition of terms, building materials, their behaviour in a fire, factors effecting stabilities of wall, staircase, roofs in case of collapse, causes and signs of building Collapse, Study of various members viz. Doors, windows, floors, roofs, staircases, Beams etc. exposure hazards & methods of its reduction.	3	-	-	3
3	Fire Extinguishers and their application	1	1	2	4
4	Electricity – Definition of common terms, properties, uses and generation of electricity, transformers, motors, static electricity, short circuit use and general hazards and its prevention.	1	1	-	2

5	<p>Hose: Types of delivery and suction hose, construction, characteristics of fire fighting hose, causes of decay and prevention storage, operational misuse, washing, cleaning, testing and repairing of delivery and suction hose and hose binding.</p> <p>Hose Drill: How to handle laying &amp; making up a hose, adding replacing, removing and raising to upper floor.</p>	1	1	4	6
6	<p>Hydrant: Essential requirement of underground fire hydrants, detailed study of sluice valve, screw down and pillar hydrant, gears, operation and inspection and testing Hydrant Drill: Three &amp; four men drill.</p>	1	1	2	4
7	<p>Hose Fitting: Detailed description and study of Hose fitting etc. couplings, branches, nozzles, and special types of branches and nozzles, stand pipe, collecting head and breaching and adaptors and miscellaneous hose fittings.</p>	1	1	-	2
8	<p>Knots &amp; Lines: Types of lines, their uses, care and maintenance.</p> <p>Demonstration and practice of important knots, lashings, splicing &amp; whipping commonly used in fire fighting &amp; rescue operation.</p>	1	1	2	4
9	<p>Foam &amp; Foam equipments: types, description of equipment &amp; demonstration of various foam branches &amp; inductors.</p>	2	2	2	6
10	<p>Ladder(Extension) Description &amp; Construction features of extension ladder, pitching, climbing, leg lock &amp; arm hold hints, care and maintenance, standard test, four men drill carrying down casualties. Rescue drill, picking up, lowering, carrying of unconscious persons, rescue from height by Firemen lift.</p>	1	1	3	5

11	Pumps: types of pumps, advantages & disadvantages, maintenance, standard test & practical pump operation. Six men trailer & Motor Pump Drill. Water Relay: Types, advantages & disadvantages. Important points for relay operation, Demonstration and practice of laying out of Hoses.	2	2	4	8
12	Breathing Apparatus: Types, merits & demerits of the sets, operational use, care, maintenance and their testing	1	2	8	11
13	Fixed Fire Fighting Installation: rules for installation, internal & external hydrants, rising mains, sprinklers and drenchers, detectors etc.	2	2	-	4
14	Familiarization on Aviation fire, Mines fire, Forest fire, Oil fire, Marine fire, High rise Building, Rail fire, Gas fire etc.	18	-	-	18
15	Course Introduction	2	-	-	2
16	Familiarization of tools, equipments, Accessories	1	3	8	12
17	Unit Test	3	-	-	3
18	Pre final exercise & debriefing	-	-	3	3
19	Final exercise	-	-	3	3
20	Opening & closing of course	2	-	-	2
21	Daily course evaluation	10	-	-	10
22	Films	-	5	-	5
	Total	55	23	42	120

## Annexure - 15

### SYLLABUS FOR HAZARDOUS MATERIAL EMERGENCY FOR FIRST RESPONDERS

**Objective:** To train the participants on hazardous material emergency handling techniques to be able to perform first response activity in an emergency situation

**Duration** 20 Working days (5 days per week @ 6 hours per day)

#### SYLLABUS

Sl. No.	Subject	No. of Hours			Total Hours
		L	D	P	
1.	Introduction to Chemical Threats and History	2	-	-	2
2.	Chemical & it's Physical properties- State of Matter, elements and compounds: Definitions-melting, boiling, freezing points: Vapour pressure, sublimation, density, vapour density, specific gravity, corrosively chemical reaction's(exothermic & Endothermic), flash point, Autoignition temperature, flammable range, toxic products of combustion. Definition of Hazardous materials: solubility oxidizers, organic peroxides, compressed gas, flammable solids and cryogenes.	2	2		4
3.	Classification of Hazardous Chemicals-Explosive and Flammables, Agricultural, chemicals, Oxidizers, cryogenes etc.	2	-	-	2
4.	Characteristics of Hazardous materials: Chemical, Biological, Radiation, Fire Explosive, toxic, corrosive hazards, Hazards due to chemical reactivity.	3	3	-	6
5.	Principles of Toxicology: Route of exposure-Inhalation, absorption, ingestion and injection, Dose-response relationship. (dose terms, dose response curve): Factors influencing toxicity-duration and frequency, route of exposure, inter species variation, intra species variation-age and maturity, gender and hormonal status, genetic make up and state of health. Environmental factors and chemical combination affecting response.	3	-	-	3
6.	Exposure Guidelines: Type TLV, TWA, STEL, ceiling, peaks skin notation, IDLH, mixtures: Dispersion of chemicals in the environment -basic dispersion patterns (Air borne contaminants, surface water, soil and underlying rocks, ground water) Effect of chemical in the environment-dilution and degradation,: environmental isolation, chemical transport	3	-	-	3

	Meteorological influences on chemical dispersion.				
7.	Recognition and Identification of Hazardous materials of Hazardous Chemical identification aids and recognition of containers	2	2	-	4
8.	Health effects of Hazardous chemicals: respiratory tract, skin, eyes, nervous system liver, kidneys, blood, reproductive system types of toxic effects (Teratogenic, mutagenic and carcinogenic)	3	-	-	3
9.	Medical Intervention of hazardous chemicals, Heat exposure, rash cramps, exhaustion & heat strokes Signs, symptoms & emergency treatment.	2	-	-	2
10	Introduction of Personal Protective Equipment – Respiratory protective devices and classes: Air purifying respirators, Air line respirators and Self-Contained Breathing Apparatus (SCBA) Levels of Protective clothing.	2	6	8	16
11	Personal Protective Equipment: Entry & Exit Medical procedures	1	1	3	5
12	Response Planning-Elements of Pre-incident Planning Support from other agencies and deployment parameters.	1	2	-	3
13	Confinement and containment of Hazardous materials: diversion, diking, retaining & releases In to water, Primary tools to control leaks from drums, pipes, tank trucks & leak, stopping devices	1	2	6	9
14	Incident of Command in control: Unified command Structure, Duties of Incident Command team, Role & responsibilities.	2	-	-	2
15	Execution Planning: Conduct, coordination & Planning resources for evacuation.	1	-	-	1
16	Decontamination: Types – Gross, Technical & emergency Decontamination, Decontamination of Patients	1	2	5	8
17	Transportation of Hazardous materials- By Rail, Road & Air: Materials Safety Data Sheet (MSDS) & Shipping Papers	1	1	-	2
18	Chemical Detection Instruments: Multi-gas meters, PID, FID, Calorimetric sample tubes & chemical agents Monitors	1	1	2	4
19	Environmental Protection Legislation against Hazardous chemicals	1	-	-	1
20	Course Introduction	2	-	-	2
21	Familiarization of tools, equipments, accessories	1	3	8	12
22	Unit Test	3	-	-	3
23	Pre-final exercise & Debriefing	-	-	3	3
24	Final exercise	-	-	3	3
25	Opening & closing of course	2	-	-	2
26	Daily course evaluation	10	-	-	10
27	Films	-	5	-	5
	<b>TOTAL</b>	<b>52</b>	<b>30</b>	<b>38</b>	<b>120</b>

**SYLLABUS FOR WEAPONS OF MASS  
DESTRUCTION FOR FIRST RESPONDERS**

**Objective: To train the participants In weapons of mass destruction techniques to be able to perform first response activities in an emergency situation**

**Duration 20 Working days (5 days per week @ 6 hours per day)**

**SYLLABUS**

Sl. No.	Subject	No. of Hours			Total Hours
		L	D	P	
1	Introduction to Weapons of Mass Destruction (WMD), WMD Examples	1	-	-	1
2	Introduction to Personal Protection Equipment (PPE)	1/2	1/2	2	3
3	PPE: Entry and Exit Medical	½	1/2	2	3
4	PPE: level and Self-contained Breathing Apparatus (SCBA)	1/2	1-1/2	3	5
5	Identifying a WMD Incident and the Response Objective	2	-	-	2
6	Event and response risk Analysis, Planning the response, risk Analysis	3	-	-	3
7	Incident Command System (ICS)	2	-	-	2
8	Identifying and Mapping the Response	1	1	-	2
9	Evacuation	1	1	1	3
10	Demobilization	1/2	1-1/2	1	3
11	PPE: Level A and gross Decontamination	1/2	1-1/2	2	4
12	Technical decontamination	1/2	1-1/2	2	4
13	Introduction to Bombs-Initiators of WMD events.	½	1/2	-	1
14	Recognition and Retreat, Personal and Group Security	1	-	-	1
15	Crime Scene Preservation	1	1	1	3
16	Blast Injuries	1	-	-	1
17	Introduction to Chemical Threats	1	-	-	1
18	Recognition of Hazardous Chemical	1	-	-	1
19	Hazardous Chemical Identification Aids	-	1	-	1
20	Chemical Detectors	1	1	1	3

21	Containers Recognition and Mitigation	-	1	-	1
22	Health Effects of Hazardous Chemicals	1	-	-	1
23	Medical Intervention for Hazardous Chemical	1	-	-	1
24	Patient Decontamination	1	1	1	3
25	Introduction to Biological Threats, Recognition of Biological Hazards, Health effects ;of Biological Threats.	1	-	1	2
26	Biological Detection and Sampling	1	1	-	2
27	Biological Incident Mitigation Protocols Table top	1	1	1	3
28	Biological Incident PPE and Decontamination	½	1/2	2	3
29	Radiation and Radioactive Material	1	-	-	1
30	Health effects of Ionizing Radiation	1	-	-	1
31	Radiation Protection and Safety Practices, Decontamination	1	1	1	3
32	Terrorists' Use of Radiological Materials	1	-	-	1
33	Radiation Detection	1	1	2	4
34	Radiation Protection and Safety Practices Tabletop, Radiological Dispersal Devices	1	1	1	3
35	START Triage	11/2	1/2	1	2
36	Critical Incident Stress Management	1	-	-	1
37	Public Information and the Media	1	-	-	1
38	Course Introduction	2	-	-	2
39	Familiarization of tools, equipments, accessories	1	3	8	12
40	Unit Test	3	-	-	3
41	Pre-final exercise & Debriefing	-	-	3	3
42	Final exercise	-	-	3	3
43	Opening & closing of course	2	-	-	2
44	Daily course evaluation	10	-	-	10
45	Films	-	5	-	5
	<b>TOTAL</b>	<b>52-1/2</b>	<b>28-1/2</b>	<b>39</b>	<b>120</b>

## Annexure - 17

### **SYLLABUS FOR COURSE ON FLOOD RESCUE FOR FIRST RESPONDERS**

**OBJECTIVES :** To train First Responders of various organisations in response action to be undertaken during and post-disaster phases in flood rescue operations.

**DURATION :** 20 working days ( 5 days per week @ 6 hours per day)

Sl.No.	Subject	No. of Hours			
		I	D	P	
<i>Total</i> _____					
1	Flood, their causes prevention, etc.	2	-	-	2
2.	Rules of river & name & parts of boat and word of command	1	1	2	4
3	Anchors & Principles of anchorage	1	1	1	3
4	Lifebuoy, Life-line, Life-Jackets & breast line Throw	1	1	4	6
5	Buoyancy Calculation	2	-	-	2
6	Ropes : Knots & Lashings	1	1	4	6
7	Embankment, Causes, Failure of embankment emergency repairs, etc.	1	1	6	8
8	OBM Types, Care & Maintenance, Speed boats	1	1	-	2
9	Construction of Improvised Swimming & Floating Aids	1	2	11	14
10	Flood Rescue Practical : Rowing & Rescue Boating including	1	2	30	33
11	Course Introduction	2	-	-	2
12	Familiarisation of tools, equipments, accessories	1	3	8	12
13	Unit Test	3	-	-	3
14	Pre-final exercise & debriefing	-	-	3	3
15	Final Exercise	-	-	3	3
16	Opening & Closing of course	2	-	-	2
17	Daily Course Evaluation	10	-	-	10
18	Films	-	5	-	5
	<b>TOTAL</b>	<b>30</b>	<b>18</b>	<b>72</b>	<b>120</b>