Bengaluru Rural

District Disaster Management Plan

2015 – 2016

CRISIS CHALLENGES VS **RESOURCE CHALLENGES**

Prepared by;

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(Non Governmental Organisation) 12/80, Infantry Road, Bengaluru-560001, India

to;

The Dy Commissioner, Bengaluru Rural District

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PREFACE

DISTRICT DISASTER MANAGEMENT PLAN

To maintain and to sustain the issues arising from Natural and Man Made Disasters, Bangalore Rural District prepares District Disaster Management Plan. The growing population and its adverse effects resulting in extreme exploitation of resources are documented in the report to keep check to develop capacities in and within the district administration. The plan also helps stake holders to know the situational, traditional and historical intelligent information to draw effective action plans as and when need arises.

The district is known for drought, exceptionally severe shortage of potable water, Garbage Dumping yards, extremely high number of Dengue and Viral fever round the year.

In addition to the inheritied and continuously growing problems as mentioned above, the district also has greater incidental challenges as it houses International Airport, Largest Petroleum Storage facilities, National Higways close to the village and towns etc.

The district administration is trying to update itself and its stake holders through DDMP regularly with an intention to document the roles, duties and responsibilities of administration and stake holders to counter any disaster situations. The DDMP is desgined to be handy and lists out the roles as defined by the Disaster Management Act 2005. The listed data helps administration and its stake holders to draw SWOT analysis to evaluate situational parities for improvisation and for preparation.

The DDMP is timely presented to the Karnataka State Disaster Management Authority (KSDMA), the nodal agency established by Government of Karnataka on yearly basis with an objective to sensitize the district resource requirements and its current position. KSDMA deals with the issues of Disaster Management based on DDMP and historical data, to strengthen district level agencies, to draw resources to support mitigation, prevention, rehabilitation and relief works. The DDMP is a basic document based on which the State Disaster Management Plan is prepared to update at the National level.

The inputs of DDMP assist district administration to draw required resources from the state to implement mitigation, prevention, relief and capacity building programs. The DDMP for Bangalore Rural District is prepared by Mr.A.Subhaskar Reddy along with his NGO “International Resource Development Centre” (a unit of Micro-D Foundation) since 2009. The IRDC personnel have proven domain expertise in research, analysis and developing Disaster and Crisis Management Plans. The DDMP is updated on yealy basis from the information collected from all stake holding departments. The critical and sensitive data collected is analysed using appropriate tools & techniques to draw conclusions. The IRDC involves national and international experts to measure the density of vulnerability, response system, preparedness, community resilience and capacity requirement.

This DDMP is in compliance with National Disaster Management Authority (NDMA) guidelines. A copy of DDMP is mailed to all the stake holders.

It is indeed my pleasure to thank Mr.A.Subhaskar Reddy, Executive Director, International Resource Development Centre (IRDC), and his Non Government Organisation Team for preparing this District Disaster Management Plan 2015-2016 for Bengaluru Rural District.

Signature

(S.PALAIAH)
Deputy Commissioner & District Magistrate
Bengaluru Rural District

Date : 28 June, 2016

SECTION – I DISTRICT PROFILE

1.1 History of Bengaluru Rural District

The landscape, mountains, lakes, great history, diversified cultures, temples worshipped and patronized by the kings of vijayanagar, birth place of Tipu sultan, vegetable and fruit gardens, centuries old weavers and stone carving artisans etc. etc. to name a few about Bengaluru Rural.

Bengaluru Rural District is essentially an agricultural district with ample scope for industrialization, dairy development and sericulture.

On 1st November 2014 Bangalore was renamed to its origin name Bengaluru by Government of Karnataka. The name Bangalore Rural District will also be called as Bengaluru Rural District from 1st November 2014. Bengaluru Rural District came into being on 15th August 1986 with the division of Bengaluru District into Bengaluru Rural and Bengaluru (Urban). The district occupies 16th place in size, Bidar, Mandya, Kodagu, and Bengaluru (Urban) Districts occupying next ranks in succession in the State. Bengaluru Rural District is located in the South-Eastern corner of Karnataka State. Spanning a Geographical area of 5,814 sq km, the district lies stretched between the latitudinal parallels of 12 15' N and 13 35' N on the one hand and the longitudinal meridians of 77 05' E and 78 E on the other.

On 15th August 2007 Bengaluru Rural District was divided into two districts namely Bengaluru Rural and Ramnagar. The Bengaluru Rural now comprises of Four Taluks namely Devanahalli, Dodaballapura, Hoskote and Nelamangala.

Bengaluru Rural District has a prehistoric site at Jadigenahalli (Hoskote Taluk). The District abounds in wonderful Tourist spots. Places of scenic beauty, tall hills, forts and beautiful monuments beckon the Tourists to visit them. The Granite Genisses that abound in Nelamangala, and Devanahalli Taluks have created captivating landscapes all along and they have provided jobs to thousands engaged in quarrying.

The Arkavati, the Kanva and the Dakshina Pinakini are the tributary Rivers which flow through the District in the General Direction from North to South. Cultivable lands are mainly rain-fed and dry farming is a characteristic feature of the district. By and large this Rural district is Agricultural and Ragi is the main crop, though mulberry is raised over in considerable tracts. The climate of the district is salubrious and very agreeable. It is devoid of extremes. The rainfall is below average and no major river flows in the district. Irrigation facilities are also limited. The district had often suffered from deficit and capricious rainfall conditions and resulted in severe crop failure. The contribution of Horticulture to the Economy of the district is quite substantial. The district has considerable tracts under Horticultural crops like Mango, Grapes, Sapota, and Papaya. Betel vine Gardens are also seen in many places. Animal Husbandry is being practiced since generations as an adjunct to agriculture. A high degree of Urbanisation of Bengaluru city has enhanced the economic importance of dairying, poultry keeping and horticulture which provide livelihood to a very large section. Considerable numbers are also engaged in raising sheep for meat and wool. Vijayapura has been the most notable center of Sericulture, Doddaballapura and Devanahalli are remembered for prosperous weaving Industry.

ORIGIN OF NAME: The Bengaluru Rural District derives its name from its head quarters town, Bengaluru and majority of the district consists of Rural Areas. The earliest reference to the name is seen in a Ninth Century Ganga inscription from Begur as 'Benguluru' 'The present name

Bengaluru is the Anglicised form of Bangalore. A popular story tries to suggest the origin of Bengaluru 'from Bendakaluru`, Hoysala Ballala, during his long journey is stated to have been fed by an old women, with Benda kalu (Boiled beans). The prince named the place as 'Benda kaluru '

The District lies in the southern maidan region of the State and is by and large an open country which is lacking in natural barriers. Bengaluru Rural District is bounded on the North by Tumkur and Kolar Districts: on the South by Ramnagar Districts and Tamil Nadu State; on the east by Kolar District and Tamil Nadu State and on the West by Ramnagar Districts.

AREA AND POPULATION:

Bengaluru Rural district has an area of 5,814sq km, and it forms about 3% of the Total area of the State.

HISTORY OF THE DISTRICT AS AN ADMINISTRATIVE UNIT;

Historically, the earliest dynasty which established its sway over this district is that of the Gangas. In about the fourth century A.D., the Gangas established themselves at Kolar and the territory comprised in Bengaluru Rural district formed part of Gangavadi and Honganur of Channapatna Taluk was the chief town of a sub-division, called Chikka Gangavadi, which occupied the Shimsha valley. During the Seventh century, Mankund was a place of great importance and was the second royal residence of Ganga Bhuvikrama (654-79) and also of Shivamara (679-726). In the eight century Shri Purusha made Manyapura (Manne of Nelamangala Taluk) his royal residence and later it was a major center under the Rashtrakutas. Manne or Mannekadakam of Tamil records had been the headquarters of Kambarasa the Governor of Rashtrakutas. Certain parts of the district, especially in the East, were held by the Nolamb Pallavas.

Rivers

The major portion of Bengaluru rural district lies in the Arkavati valley. The Arkavati, the Kanva and the Dakshina pinakini (southern Pennar) are the rivers which flow through the district in the general direction from north to south.

Unique Cultural system contributed to the wealth of the Indian Cultural Heritage. Bengaluru Rural District is located in the south-eastern corner of Karnataka spanning a geographical area of 2259 sq.km. The total population of the district is 987257 as per the 2011 census. The district lies between the latitude parallel to 12 15' North and the longitude and meridians 77 05' East and 78 West. The mean sea level of the district is at a difference of height between 629 to 950 mtr. Bengaluru Rural District consists of 4 taluks namely: (Devanahalli, Doddaballapur, Hoskote, Nelamangala)

Brief History of Devanahalli

Devanahalli taluk situated 36 kms from Bengaluru has four major hoblis as follows:

a) Vijayapura Hobli
b) Channarayapatna Hobli
c) Kundana Hobli
d) Kasaba Hobli

The taluk comprises 21 gram panchayaths covering 44,935 hectares of area. The main occupation in the villages of the taluq is into silk producing activities such as silkworm breeding, reeling, weaving and twisting. The taluq is also known for other rural industries such as carpentry, masonary and stone cutting. The multipurpose co-op societies are established to support skilled labour, artisans and village industry.

1) Taluk Level Artisan's Multipurpose Co-op Society (Devanahalli).
2) Taluk Level Artisan's Stone-cutter's Multipurpose Co-op Society (Devanahalli).

DEVANAHALLI, a town situated at a distance of 39 km from Bengaluru, is a taluk headquarters and is mentioned variously in several records as Devanapura, Devandanahalli, etc. In about 1501, Mallabhaire Gowda of Avati is said to have built a fort with the consent of `Deva' a feudatory at Devanadoddi and changed the name of the place to the Devanahalli. In 1747 Mysore dynasty conquered the place. The Marathas conquered it several times from Mysore. The remains of this fort were formerly seen inside the present fort. The present fort with large and tall walls having bastions at suitable points is acri-bed to Haider and Tipu Sultan. Tipu Sultan also changed the name of the place as Yousafabad (the abode of Yosuf, the finest man), a name which however never became popular. Since Devanahalli was his birth-place, Tipu `frequently undertook hunting as well as pleasure excursion to this place', says Kirmani.

There is a memorial now at the birth place of Tipu Sultan outside the fort. It is about six feet tall with a pillared enclosure and square top and bears a stone tablet. The area called Khas Bagh, now contains many tamarind trees, a few mango trees and a small dried pond. It was once an enchanting spot, being Tipu's private park. Inside the fort are temples dedicated to Venugopalaswamy, Nanjundeshwara, Chandramauleshwara, Veerabhadraswamy, Ranganathaswamy, Kalamma, Balagopala (old), Nagareshwara and Basaveshwara. The Venugopalaswamy temple has a tall Rayagopura at the entrance and has a spacious inner Prakara. At the entrance are placed two Vishnu statutes of Ganga times, said to have been ground from Gangavara village. The images are impressive and one of them has a Prayogachakra in one hand, Shankha, Abahaya and Gada being the attributes of remaining hands.

The Garbhagriha has a standing Venugopala image of Vijayanagara style. There is a Dravidian Shikhara over it. The Navaranga has four black stoned pillars carved with fine relief sculptures on all sides, such as Hayagriva, dancing female figures with attendant musicians, a conch blower, a Kinnara with the lower portion of his body in bird form, a huntress removing a thorn from her leg, etc. The Mukhamantapa has niches over the frontroof. They have fine stucco figures. The brick Shikhara two many stucco figures alround. The outer walls have a frieze of large images illustrating scenes mostly from the Ramayana.

The story of Balakandais is well illustrated by the figures on the north and south walls. A portion of the frieze on the north will have interesting scenes like Rishyashringa being brought from the forest to Ayodhya by dancing girls, asharatha performing the sacrifice with the help of Rishyshringa and other sages. The story is continued on the south wall upto the Ahalyoddahara episode. A frieze on the east wall to the left of the entrance represents the story of Vishwamitra teaching archery to Rama and a portion of the south wall also illustrates the sports of child Krishna and by its side are the Dashavataras of Vishnu. In a cell is the Prakara is kept an artistically executed gild vehicle of god called Chitragopura-Vahana with two female figures standing on either sides.

This Utsava is held on the Chaitra Poornima (April) every year. It is said that a grand illumination is arranged on this day and one lakh lamps are lit. A silver cup and a bronze gong belonging to the temple bear inscriptions stating that they were presents from Haider and one Dondu Raghunath, a subordinate of the Peshawa Balaji Rao respectively. The Nanjundeshwara temple is a small building with two cells in a line and a common Navaranga. It is said that this was earlier called Kashi Vishveshwara and is regarded as the oldest temple in the town. All the door ways of this temple are well served. The Dwarapalakas at the entrance of the Ardhamantapa have over them pilasters carved with the vase and creeper motifs. To the left of the Navaranga are images of Narayana, Takshaka, Brahma, Karkotaka, Saraswati, and Subhrahmanya etc. The Chandramauleshwara temple with a spacious inner Prakara is built in Vijayanagara style. The Garbhagriha has a Shivalinga and there are two cells on either sides with images of Ganapati and Parvati enshrined respectively. There is a Siddheswara temple (Matha) of the Veerashiva Community with a seated figure, about one-and-half metre high of Siddeshwara with two hands, the left holding a Linga and the right offering worship.

The place also has a Mahantha Matha. The large pond knows as Sarovara is said to have been built by Dewan Purnaiah and the Anjaneya in the Shrine near it is called Sarovar Anjaneya. The Gangamma temple of the fisherman community has a fine stucco seated image, about five feet high of the Goddess with four hands holding trident, a drum, a sword and a Panapatra in them. There is a small hillock on the Avati road called Parvatagudda having shrines of Anjaneya and Verrabhadra on it. The last mentioned is enshrined in a small cavern and there is also a small stream. The place also has a mosque of Tipu's times with pleasing minars. Devanahalli has a traditional school of sculpture called `Shilpakala Shala' which was being run by great sculptor A.C.Hanumantacharya.

Brief note of the Doddaballapura Taluk

Doddaballapura taluk comes under Bengaluru rural district. The total geographical area covered 78,760 hectares and having five Hoblies namely:

a) Doddabelavangala
b) Thubagere
c) Sasalu
d) Madure
e) Kasaba

Doddaballapura Taluk has 29 grama panchayaths. The main activity of the taluk is manufacturing of silk clothes by power looms and other activities of the taluk are manufacturing of Veena and Thamburi, Pottery works, Agarbatti etc. There are also different types of small scale and large scale industries setup in the industrial area and industrial estate.

Doddaballapura is situated to the north-west of Bengaluru is a sub-division and taluk centre. The place is covered on the north and north-west by a chain of mountains and offers an uneven land-scape with partially plain land area, and is on the bank of the river Arkawati. The place is directly connected by railway. Dodballapur was a celebrated commercial centre right from the Hoysala period. There is also a view that the town was founded by a feudatory Malbhairegowda of the Avati clan. Perhaps he fortified the existing town. During the period between the 16th-17th centuries, Dodballapur was administered by a branch of the Avathi clan. Towards 1637-38, the place was occupied by the Bijapur Commander Ranadaula Khan. For the next forty years,

Dodballapur continued to be in the hands of the Bijapur Sultans, being a part of Shahji's Bengaluru Jahgir.

In 1689, it is taken by the Mughals, when the place was in the hands of Sambhaji, son of Shivaji, the latter having taken it from his brother Ekoji. The place was presented as a Jahgir to a Muslim chief Ali Khuli Khan. After his death, his son Darga Khuli Khan, the Nawab of Sira, received the town for a temporary period of one year as Jahgir. Later, for a span of fifty years, the place was under the Nawab of Sira when the Nizam of Hyderabad took over administration. It is described that one feudatory Abbas Khan received Dodballapur as Jahagir. In 1761, Haider Ali annexed the region and subsequently it passed on to the Wodeyars of Mysore. The place name Dodballapur is so named to distinguish it from Chikballapur.

The place is found mentioned as Ballalapura thanya in a record dated 1598 AD from the local Adinarayana temple. It might have originated from Hoysala name Ballala, and later corrupted as Ballapura. According to a legend the place derived its name from the circumstance that a cow used to drop one `balla' of milk over a certain anthill and this omen led to the foundation of the town. From `balla' the name Ballapura was thus derived. Perhaps from the earliest times, the place is noted for silk weaving industry and many weavers also migrated to Bengaluru from here. There is an extension in Bengaluru called Ballapura Pete (present Rangaswamy gudibeedi). The town evidenced some disturbances during the Nagar uprising in 1830 when a large number of people from Madhugiri came to protest against the act of the Tahshildar of Dodballapur (one Venkatakrishniah), who during his term of office at Madhugiri as Tahshildar had failed to make proper adjustment of the revenue collected.

Of the many monuments seen in Dodballapur, the Ashur Khana and a big stone well are important. The Ashur Khana is said to have been built by Abbas Khuli Khan. It is a fine building in Indo-sarcenic style with a spacious compound having a tall enclosure on all the sides. Presently, the building is used for running a Urdu Primary School. The fort walls are not seen now, but the area has many fallen buildings and house foundations. A Hoysala stone inscription dated 1267 A.D. (now preserved in the taluk office) is of special interest as its top portion is used for inscribing a Persian record as well.

This Persian record dated 1691 A.D. is of the time of the Mughal Emperor Aurangzeb. It says that in the 34th year of the reign of Aurangzeb (1689), the fort of Balapura - kariyat was in the hands of Samba Dud (Sambhaji), son of Siva Dud (Shivaji) and it came into the possession of the supreme Government and that in the 34th year of the reign, it was granted to one Shekh Abdhulla from Delhi. The place has four mosques of which, the Jamia Masjid near Ashur Khana is the biggest. There are seven Dargahs acribed to Ali Khuli Khan, Mohibuddin Allah-ud-din Chisti, Gauhar ullah Shah, Dilawar Ullah Shah, Hasan Shah and Kambal Posh Khadri. The Dargah of Mohiuddin Alla-ud-din Chisti is a fine structure. The Urus here is held during Safar when about 2,000 people assemble and special qawali programmes are also held. The Peers, Gauhar-Ullah-Shah and Kausar-Ullah-shah are said to be contemporaries. The Uruses of both of these take place during Safar. The last mentioned Kambal Posh Khadri Dargah is situated at the outskirts of the town over a tank-bund. The Urus at Dilawar-Ullah Shah is annually held around April.

The town has important temples such as Venkataramana, Chowdeshwari, Ishawara, Someshwara, Janardana, Kashi Vishveshwara, Nagareshwara and Arkavati. The Venkataramana temple is a huge structure covered with a vast compound. The compound with stucco decorations has impact of Muslim architecture. In front of the square Garbhagriha is an oblong Navaranga

having two cells with images of Padmavati in the left one and Vinayaka in the right one. Facing the Navaranga is a spacious horizontal Mukhamantapa having fine relief sculptures over its later Vijayanagara pillars.

Over the Hara of the Mukhamantapa are small mortar niches having impressive stucco figures depicting the Bhagavatha episodes. The temple has a spacious inner Prakara with an outer Pradakshinapatha. At the entrance of the temple is a Rayagopura in recent style. There is a Shikara over the Garbhagriha built in later Vijayanagara style. The temple is believed to have been constructed towards the end of 18th century by a local officer under Haider called Arunachala Panth. Two relief images inside described to be of the Arunachala Panth and his wife Sehshamma on a pillar have been covered with plaster. Inside the temple, over a platform is kept a stone image of Lakshminarayana in Vijayanagara style, measuring about one and a half metre in height, said to have been brought from the local Adinarayana temple.

The annual car festival in honour of lord Venkataramana is held on Magha Poornima day and the Jatra is held for a span of nine days, when about 10,000 people assemble. To the south of the Venkataramana temple is the temple of Arunachaleswara, also ascribed to the same Arunachala Panth, built during the same time. This had been repeatedly renovated. It has a central Garbhagriha with two more cells built adjacently on either sides, having images of Ganapathi and Parvati. Facing this is a Mukhamantapa with pillars in later Vijayanagara characters. Beside this temple is the local Shankara Matha having images of Sharada, Adi Shankara and Vinayaka. Nearby, in the Devanagapete is the Chowdeshwari temple (renovated, described as over 300 years old.

There are three Garbhagrihas in a row housing Shivalinga (central), Chowdeshwari and four mosques of which, the Jamia Masjid near Ashur Khana is the biggest. There are seven Dargahs acribed to Ali Khuli Khan, Mohibuddin Allah-ud-din Chisti, Gauhar ullah Shah, Dilawar Ullah Shah, Hasan Shah and Kambal Posh Khadri. The Dargah of Mohiuddin Alla-ud-din Chisti is a fine structure. The Urus here is held during Safar when about 2,000 people assemble and special qawali programmes are also held. The Peers, Gauhar-Ullah-Shah and Kausar-Ullah-shah are said to be contem- poraries. The Uruses of both of these take place during Safar. The last mentioned Kambal Posh Khadri Dargah is situated at the outskirts of the town over a tank-bund. The Urus at Dilawar-Ullah Shah is annually held around April.

The town has important temples such as Venkataramana, Chowdeshwari, Ishawara, Someshwara, Janardana, Kashi Vishveshwara, Nagareshwara and Arkavati. The Venkataramana temple is a huge structure covered with a vast compound. The compound with stucco decorations has impact of Muslim architecture. In front of the square Garbhagriha is an oblong Navaranga having two cells with images of Padmavati in the left one and Vinayaka in the right one. Facing the Navaranga is a spacious horizontal Mukhamantapa having fine relief sculptures over its later Vijayanagara pillars.

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Of the other temples in the place, mention may be made of Kashi Vishweshara (renovated), Someshwara (outside the town), Kalika Kamateshwara, Nagareshwara and Vaikunta Janardhana. The Kalika Kamatesh- wara temple is perhaps the oldest and has two typical Vijayanagara pillars with jumping hypogriff motifs. The Vaikuntha Janardhana temple near the bus stand is built in later Vijayanagara style. The outer Mantapa has pillars in Mysore style with fine relief sculptures. The Nagareshwara temple has three Garbhagrihas in a row with images of Ganapati, Linga and Parvati enshrined in them.

The place has a Raghavendra Matha built around 1964. There is a Shaiva Matha opposite Kashi Vishveshwara temple, with a Gudduge ascribed to a saint Shankara Shivananda Gaganarya. Inside the taluk office compound is an ordinary Marti temple around which are many antiquities like images of Mahishamardini (Ganga times) and Durga and broken pieces of Hoysala pillars. The pillars might belong to the Gavareshwara temple in the fort area as referred by the Hoysala stone record dated 1267 A.D. also preserved in the taluk office. The very name `Gavareshwara' suggest that the temple must have been patron deity of the merchants and the temple has received a grant from the traders of Rajaghatta as per the above record. The town also has a Mahaveera Svetambara Basti built recently in north Indian style. The place has a Catholic Church. The place was a centre of freedom movement with T.Siddalingayya, the first president of Mysore Congress hailing from here. On the Bengaluru road is an industrial area housing many modern industries like Himatsingka Saide producing silk fabrics or Dodballapur Spinning Mill.

Brief History of Hoskote

Hoskote taluk is a part of Bengaluru rural district 25km away from Bengaluru city. Hoskote taluk consists of 5 Hoblis namely:

a) Sulibele
b) Anugondanahalli
c) Jadagenahalli
d) Kasaba
e) Nandagudi

Hoskote taluk has 34 Grama panchayats. This taluk has geographical area of 54,857 hectares. The people of this taluk are mainly depending on agriculture. The Bee keeping is based on agriculture, Horticulture and Forest. There is a good source and potential for Bee keeping in this

taluk. The Bee keeping is also considered as rural industry. The Bee keeping industry has covered 49 villages and there are 226 Bee keepers, who are maintaining 358 Bee colonies i.e., Apiaries cerena indica. The state government is providing training programmes and issuing Bee inputs under 50% subsidy to lift up the bee keeping in large scale. The main object of the bee keeping is to get good yeild of the crops through cross pollination from bees like honey, bee wax etc. There are two government apiaries of artisan training institute, one at taluk panchayath premises in Hoskote town and another apiary at adarsha grama yojana, Sonnallipura.

HOSKOTE, 12 km from Bengaluru was a pre-historic centre. According to a copper plate grant dated 1494, given to a Veerashiva Matha the place was founded by Thamme Gowda, the chief of Sugatur. The place is also noted for a large tank with an embankment which is two miles long, and when full, forms a sheet of water not less than 12 km in circumference. Thammegowda is said to have constructed this tank and by raising an armed force, he annexed places like Anekal, Mulbagal and Punganur (A.P.). His successors ruled till 1638 A.D. (see chapter II). Shortly after, the territory was conquered by the Bijapur army and subsequently conferred as a Jahgir on Shahji, who resided at Bengaluru. He had an officer called Yeshwantrao posted here. On the capture of these districts by the Mughal army under Khasim Khan in 1687, they became part of the Sira Province. In 1756, Hoskote was taken by the Mysore army, but was subdued by the Marathas (Peshwa). It changed hands several times until it was finally annexed by Haider Ali in 1761 A.D.

The old fort area has the Avimukteshwara, Varadaraja and the Vithoba temples. The Avimukteshwara is a very large Dravidian structure ascribed to Thammegowda, the chief of Sugatur. It has three cells in a line, the middle cell enshrining a figure of Virabhadra, the one to the right Shivalinga and other to the left Parvati. There is an oblong Ardhamantapa with its entrance having Dwarapalakas. There is a spacious Navaranga with rows and rows of Vijayanagar pillars having very interesting sculptures depicting Shiva episodes. Inside the Navaranga are placed impressive sculptures of Ganapati (two handed) and Subhramanya (with two hands) having early Vijayanagara features. In front of the temple is a fine Dipasthambha, about 7.5 metres tall with a circular pedestal. It is in the Maratha style. On a pillar to the left of the Mukhamantapa is carved a standing figure of a Bhakta, described as representing the chief Thamme Gowda. A similar figure is also seen on one of the pillars of the Kalyana Mantapa. Behind the temple (outside) was an ashmound and many stone tools had been loacted. Other temples of the place are Varadaraja, Anjaneya (two), Panduranga Vithala, Kashi Vishveshwara and Sri Rama.

The Varadaraja temple has two Garbhagrihas, with the central one having a standing image of late Vijayanagara workmanship and the left cell has the seated image of Devi. The pillars of the Navaranga are in Vijayanagar style (renovated) and have many relief sculptures. It has been said that the temple was renovated around 1830 by the then Tahsildar Biligiri Rao. He is also said to have built the Anjaneya temple (also called Agrahara Anjaneya) near the tank sluice. Another Anjaneya temple in the fort area has a tall image in profile, about one metre height. An unpublished Tamil record is seen near this (pete Anjaneya) temple. This temple which appears to have been renovated rcently has a Navaranga having four beautifully carved black stone pillars. It is said that they originally belong to an old Shiva temple of Dravidian style. Some of the relief sculptures here depicting Shiva Purana episodes are of fine quality. Among the interesting are a huntress armed, with bow and arrow removing a thorn from one of the legs, Tandaveshvara with Vishnu as a drummer and Brahma and Subrahmanya as attendant musicians, Narasimha as a drummer, Bedara Kannappa, Yama seizing Markandeya, Bhikshatana Shiva resting his right hand on a basket borne on the head of a dwarf and receiving alms from a woman, etc.

The Vithala (Panduranga) temple also has three cells in a row and the central cell has a good image of Vithala about one metre tall, flanked by consorts. Two pillars in the temple are in Vijayanagara style. The deity stands with his two hands placed on the waist. The right cell has figures of Garuda and Ganapathi and the left a figure of Hanuman. The main gate of the fort itself appears to have been used as entrance to the temple, and touching this entrance are remains of fortification. From the records in the possession of the priest of the Vithalaswamy temple, we learn that it was built around the middle of the 17th century by Raghunath Bhavji, Subedar of Hoskote Paragana at the instance of the Peshwa. The village Turugalur (Malur tq) has been granted to the deity as per this rcord. The place has two Veerashaiva Mathas called Mahantaiah Matha (also called Chilume Matha) and Virattayya Matha. The last mentioned is about 1.5 km outside the town. The former is called `Chilume' as it has a perennial spring in the form of well which supplies good drinking water to a portion of the town. The Virattayya Matha is a large building with several sculptured pillars and it is also said to have been constructed by Tammegowda.

Behind the Matha is a fine well faced with dressed stone slabs on all sides. In a private garden are a few Masti-stones which differ in some respects from all other such stones in other parts of the old Mysore area. One of them shows a male figure armed with daggers in both hands, the right hand being raised; while a female holds in her left hand a water vessel and the right hand placed on the belly. In the municipal garden is a small building, where many sculptures like a number of Nandis, images of Vishnu, Virabhadra, Ganapati, a Saptamatrika panel, one Masti stone, etc. are preserved. The town also has shrines of Nagareshwara, Maravva, Venugopala, Kalamma (old) etc.The annual Karaga and the Avimukteshwara Jatra are held in April-May (Chaitra-Poornima) when more than 10,000 people gather. There are four mosques in the town. In a private garden near the fort is a Dargah ascribed to Saballi Sab Ali Sab, who is said to have lived about 200 years ago. The Urus here is held during Ramzan. Near this, across the field is a small Hanuman temple with Vijayanagara pillars, and names of many devotees are engraved on them such as Appaji, Muddamma, Gopali, Chikkamuddappa, Nagisetti, Ballappa, etc. There is also an old temple tank here. Another Dargah situated near the old mosque in the town is ascribed to Sailab Ali Shah and the Urus is held in the month of Bakrid.

Brief History of Nelamangala Taluk

Nelamangala taluk comes under Bengaluru Rural District. Taluk has three hoblies comprising Twenty Two gram panchayaths.

a) Kasaba
b) Tyamagondlu
c) Sompura

The main activity of the taluk is manufacture of silk cloths by using power looms and other activities of the taluk are Agarbatti making, Handicraft articles etc. Also different types of small scale and large scale industries are set up in the industrial area.

Nelamangala is situated on the National highway (27 km from Bengaluru) is found mentioned as `Nelavangala' a headquarters of a Sime in a record dated 1464 A.D. of a Vijayanagara fedatory from Kanasawadi. One Junjanayaka was the officer in charge of this Sime. The place had the name `Bhumadana' according to some tradition, not confirmed by records. Nelmangala appears to have been transferred to the Mysore Rajas along with Thyamagondlu by the Mughals, around 1689 A.D., having acquired it from Bijapur. The place has temples of Rudra-

deva, Basaveshwara, Anjaneya (two), Lakshmi Channakeshava (small), Ganesha, Kashi Vishveshwara, Veeranjaneya, Mahalingeshwara, Basavanna, etc.

The Rudradeva temple in Mysore style has two cells, one having Veerabhadra and the other having a Shivalinga, and is renovated. Outside is a small shrine of Candkieshwara and facing the temple is a four-pillared Mantappa called Vasantha Mantapa with a stucco tower. The Lakshmi-Channakeshava temple has one cell having a recently established Kannikaparameshwari. The Kashi Vishveshvara on the tankbund is built in later Vijayanagar style. Nearby is a modern Rama Mandira and its pillars have fine relief sculptures. There is an unpublished inscription dating circa 1743 A.D. On the Sondekoppa road (Two km) in a quiet place amidst rocky blocks is a small temple of Bayalu Ganapati.

There is also a choultry, the place serves as a good picnic spot for surrounding villages and locals. On the Basavanahalli road is a huge Venkateshwara temple facing east built in later Vijayanagar style. Its Navaranga has pillars in later Vijayanagara style. There is an open Mukhamantappa. Outside the temple is a kalyani in-between the two rocks and it is having stone steps. On its bank is a small deserted shrine having a two handed image. Behind the Venkateshwara is a small shrine housing Ranganathaswamy in high relief, facing west. The annual Jatra and car festival are held together during April on the Chitta star for a span of three days. Across the road are separate temples of Anjaneya, Kannappa and Ganesha, all recent. The place has one Mosque and one Dargah near bus stand.

1.2 Introduction and Location of Bengaluru Rural District

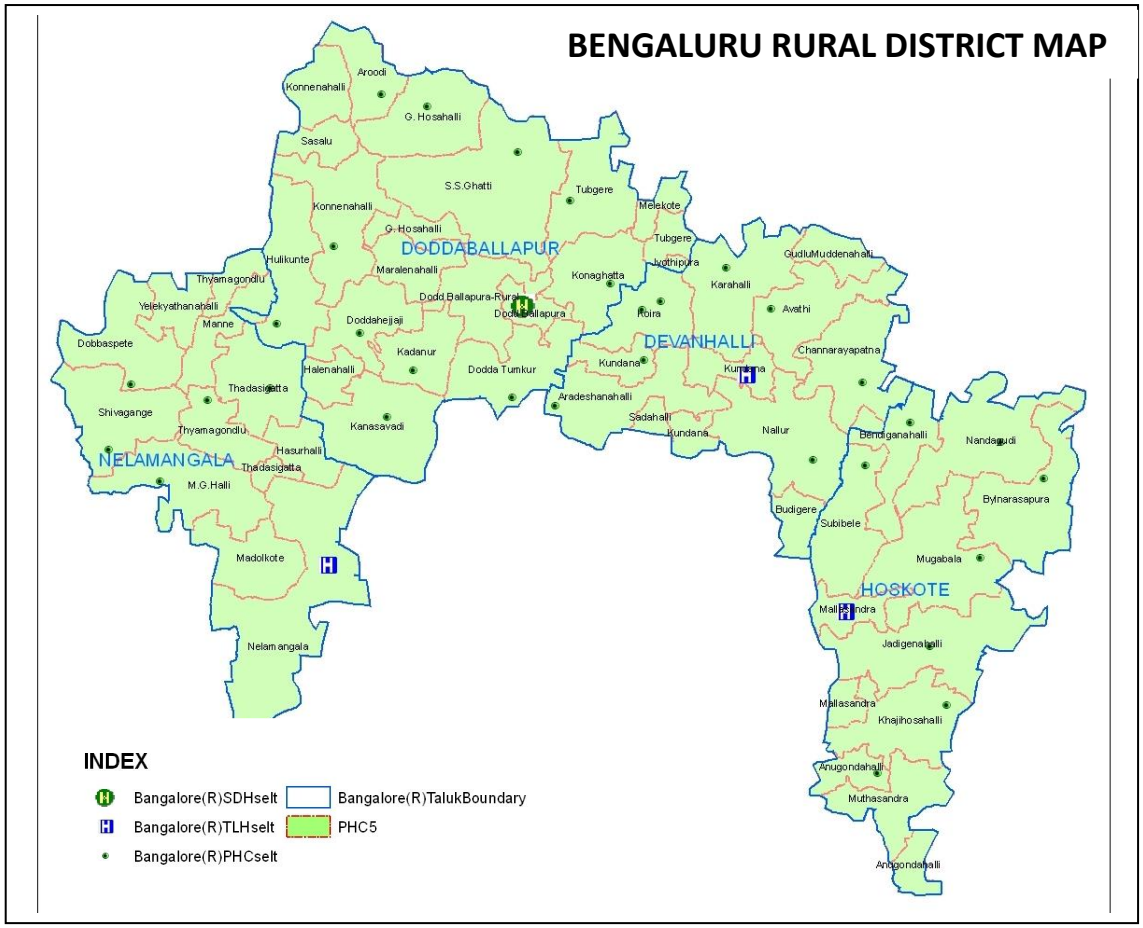
Bengaluru Rural District lies on the South East of Karnataka State. The district lies between the latitude parallel to 12” 15” North and 13”35”North and the Longitude and meridians 77”05”east and 78”east. The mean sea level of the district is at an height of between 629 to 950 meters. This District comprises of Devanahalli, Doddaballapura, Hoskote, and Nelamangala Taluks.

Kolar and Tumkur district lies to the North of the district. Bengaluru Urban district lies to the south, the Kolar and Dharnapuri District of Tamilnadu State lies to the east and Ramnagar and Tumkur districts lies to the West.

The Geographical area of the district is 5814 Square Kms. The area of the District is 3.02 per cent of the total area of the State and it occupies 16th place in the state. The sub-division is at Doddaballapura comprising of Doddaballapur, Devanahalli, Hoskote, Nelamangala taluks. In each taluk there are 3 to 5 hoblies comprising of 17 hoblies in the district. One Zilla Panchayath, 4 Taluk Panchayaths and 98 Grama Panchayaths are functioning in this district.

The River Pinakini, Arakavathi and Kanva flows across the district from North to South.

Bengaluru Rural District is famous for Sericulture, Floriculture, Milk Produce, Vegetables, and Handicrafts. Ghati Subramanya Swamy Temple in Doddaballapura Taluk, Shivagange Betta and Vijaya Vittala Temple and Arasinakunte in Nelamangala Taluk, in Devanahalli Taluk are some of the important tourist spots. Doddaballapura taluk is famous for handlooms.



1.3 Administrative Setup

Bengaluru Rural District – (2015-16)								
Sub-Division	**Taluk Names**	**Hoblies**	**Grama Panchayaths**	**Nada Offices**	**VA Circles**	**Total Villages**	**CMC**	**TMC**
Doddaballapur	Doddaballapura	5	29	4	58	298	1	0
	Devanahalli	4	21	3	34	214	0	2
	Hoskote	5	26	4	46	297	1	0
	Nelamangala	3	22	2	53	243	0	1
District Total		**17**	**98**	**13**	**191**	**1052**	**2**	**3**

1.4 Geography : Land Formation

This district is largely situated above 650 to 900 meters above sea level, taluk wise land utilization in hectares is as under;

Taluk	Fallow Land in Hectares			Area Sown in Hectares		
	Current	Others	Total	Net	More than once	Total
Devanahalli	2932	3283	6215	19826	1638	21464
Doddaballapura	4788	6362	11150	40134	911	41045
Hoskote	4626	6086	10712	23872	895	24767
Nelamangala	3965	1647	5612	24271	289	24560
Total	**16311**	**17378**	**33689**	**108103**	**3733**	**111836**

108103

The district has a total geographical area of 229519 hectares of land, out of which Forest occupies 11322, non agriculture land 43975, Barren Land 11124, Cultivable Waste land 3898, Permanent Pastures 3879 and Trees and Groves 13529.

The Fallow Land is 33689 hectares, the Area Sown is 111836 hectares. In principle the good portion of the land is fertile and cultivable. However, the district is mainly dependent on monsoons and ground water for cultivation, the serious concern recorded is severe reduction in ground water table due to poor monsoons and encroachment of rain water charging channels like ponds, lakes and rivers. It is observed that this may result in reduction of crops such as Mulberry, Vegetables, Flowers, Grapes, Ragi and Paddy, it means, a serious concern for 24% population (Total District Population 1073899) are depended upon agriculture, horticulture and sericulture as their only income. The dry land is normally used for growing Nilgiri trees, the district inspite of having rich soil, because of poor water resources, the good portion of the land lies unused or under utilized.

This district land even today being partly agriculture oriented, large portion of population are engaged in agriculture, sericulture, dairy and animal rearing. In this district Sheep and Goats are reared using the pasture lands, till few years ago forest land was used for grasing, from 2012 forest department has stopped sheep and goat farmers entering forest land for grazing. The agriculture labour is becoming scarce due to industries establishing near to rural areas and another reason poor rainfall and unstable poor ground water table in the district. This is resulting in abandoning of agriculture activities and jobs by labour and moving into industry jobs. One of the reasons found during our study, as why the agriculture production is on a free fall and resulting in low production and non utilization of agriculture land. Except very small percentage of farmers are depended on agriculture, it is foreseen even this percentage will reduce in near future.

The district taluqs share boundaries with Bengaluru Urban District. The Urbanisation has already encroached substantially into the district. The expansion of the city into the district is growing at alarming level. The shortage of basic necessities such as water, electricity, schools, drainage system, waste management, transport, fire stations, hospitals, infrastructure, police etc. are having huge resource constraint in managing this haphazard development. The unplanned developments in the Low lying areas are some of the serious concerns, during monsoons in the event of heavy down pour of rains there may be incidents of water entering the residential areas in Hoskote, Devanahali and Nelmangala taluks.

1.4.1 Rainfall

In this district, rain comes by seasonal monsoons during April to September normally on an approximate average of 800 mm, with average 59 rainy days. The district has 20 Rain gauge stations adequate to measure the data. The actual rain fall statistics is as under;

Rainfall details in Bengaluru Rural District (2003 to 11th November 2014)												
Year	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Devanahalli	457	734	864	416	798	848	755	868	768	614	796	735
Dbpura	357	660	803	468	771	786	661	631	595	450	764	971
Hoskote	533	965	1064	385	960	1015	589	787	781	701	712	644
Nelamangla	595	987	988	598	880	998	712	989	851	756	1058	1044
District Avg. Total	**486**	**837**	**930**	**467**	**852**	**912**	**679**	**819**	**748**	**630**	**832**	**848**

Weather and Temperature

The weather and temperature in the district is not much variable. The average minimum temperature is 22 degree Celsius and average Maximum temperature is 32 Degree Celcius. The maximum temperature of 40.07 Degree Celsius is recorded in May 2016. The temperature for the first time in the recorded history crossed 40 degree in the district. It is also observed increment of 2 to 3.6 Degree Celsius in temperatures past ten years.

Rivers, Tanks, Wells and Tube Wells: The district has two rivers which are partially active during monsoon; they are South Pinakini at Devanahalli and Hoskote, Arkavathy at Doddaballapua and Nelamangala.

Taluk	**Source of Water for Irrigation and Total Area Sown in Hectares (2011-12)**								
	Canals & Lift Irrigation	Tanks with water	Total Tanks	Wells with water	Total Wells	Gross Area Available for Irrigation	Net Area Irrigated	Tube Wells	Loss of Agricultural area due to lack of water
Devanahalli	Nill	Nill	114	Nill	2792	7429	6545	9737	884
Ddpura	Nill	Nill	168	Nill	515	10108	9025	8290	1083
Hoskote	Nill	Nill	209	Nill	3140	7548	5722	8174	1826
Nelamangala	Nill	Nill	263	Nill	1695	4634	4343	4444	291
Total	**Nill**	**Nill**	**754**	**Nill**	**8142**	**29719**	**25635**	**30645**	**4084**

1.4.2 Fishing

In Bengaluru Rural District fishing is done in rivers and tanks at small level, used mainly for local consumption. The district being non coastal region fishing is not an industry to count. Due to which hardly we find reliable mechanized boats, mostly fishing happens in manual boats of small

capacity. The total Fish Catch for the period 2009-10 in Metric Tonnes at Devannahalli is 89 MT, Doddaballapua 450 MT, Hoskote 61 MT and Nelamangala 101 MT as of 31st March 2010. The total catch is negligible to its actual consumtion in the district. The district is mainly dependent on sea fish coming from coastal regions.

Livestock details of the District : Livestock Census – 2007

Livestock Census – 2007					
		Devanahalli	**Doddaballapura**	**Hoskote**	**Nelamangala**
Cattle	**Indigenous**	4965	19834	4739	21125
	Exotic	-	-	-	-
	Cross Breed	36071	37619	21691	18823
Buffaloes	**Buffaloes**	10493	4658	10348	3204
Sheep	**Indigenous**	47873	42764	34586	16614
	Exotic	34	0	30	0
	Cross Breed	58	175	15	0
Goats	**Goats**	18778	34050	18450	23264
Pigs	**Indigenous**	377	307	133	186
	Exotic	30	0	0	0
	Cross Breed	34	165	708	87
Rabbits	**Rabbits**	54	39	37	270
Dogs	**Dogs**	15902	9264	8415	6930
Others	**Others**	26	18	9	0
Poultry	**Poultry**	1338187	1171352	2271458	339994

The Animal Wealth is in the growing trend for the past 10 Years, it is noticed that this district which was depended upon agriculture in the past is slowly progressing and developing in cattle, buffalo, sheep, and poultry breeding as a serious alternate family income to survive from poor monsoons and depleting ground water table.

In this district;

8 Veterinary Hospital,
37 Dispensaries,
27 Primary Veterinary Centres,
4 Cross Breed Centres,
21 Artificial Insemination Centres,
1 Regional Laboratory

Amounting to total 98 Veterinary institutions are there as on 31-03-2012.

1.4.3 Sericulture (2012-2013)

The District is known for cultivation of Mulbery plantations and extensive involvement of Cocoon production, one of the prominent Silk Cocoon Market is in Hoskote Taluk. The following report lists out the size and nature of Sericulture Production and Land used for cultivation of Mulbery plants. It is important to say the sericulture is household occupation for many farmers, we may find entire family with all age groups of the family participating.

Taluk	Area under Mulbery (Ha)	Cocoon production (tones)	No. of Farmers engaged in the occupation	Value of Silk produced (Rs. in lakhs)	Govt. Cocoon Market
1*	2681.38	2341.74	3583	603.95	1
2*	358.08	651.21	588	167.45	-
3*	2282.87	2444.03	3458	628.46	-
4*	30.36	12.39	73	3.18	-
	5449.69	5449.38	7702	1403.04	
1* Devanahalli			3* Hoskote		
2* Doddaballapura			4* Nelamangala		

The above data is as of 2012-2013, the total number of farmers engaged in the occupation are 7702 and total area used for cultivation of mulberry is 5352.69 hectares.

Forest

In this District, total area is 229519 Hectares among it 11322 Hectares cover Forest Land as of 2012-2013 statistics. The forest lands are preserved and protected from intrusions, the trees and plants grown in the forest are primarily Bamboo, Teak wood, Rose Wood, Silver wood and major part with Eucalyptus. The animals such as Deer, Fox, Rabbits, Wild Pigs and Wild Dogs are witnessed in some parts of the forest area in the district. It is known from the locals that leopards, bears and elephants were there in the district, now they are extinct in this region due to developmental reasons.

The forest is used for animal rearing mainly sheep and goats by the farmers till 2012. From 2012 onwards forest department in the district do not entertain forest land for rearing livestock to control poaching and illegal cutting of trees.

1.4.4 Population

This district has a total population of 987257 as per the 2011 Census, there has been a major growth in the last 10 years. Out of the total population in 2011 census, 719564 constitute Rural Population and 267693 constitute Urban Population.

Taluk	Area in (Sq. Kms.)	Population Census – 2011				
		Total	Male	Female	Rural	Urban
Devanahalli	431	209712	107967	101745	146796	062916
Doddaballapura	778	297622	152671	144951	197204	100418
Hoskote	544	270311	140203	130108	213698	056613
Nelamangla	506	209612	106673	102939	161866	047746
Total	**2259**	**987257**	**507514**	**479743**	**719564**	**267693**

According to population survey 2011 Bengaluru Rural District total population is 9.87 lakhs. In which there are 5.07 lakh of males and 4.79 lakh of females.

The Number of people having knowledge of words (literate) are 693,068 in which 388,833 are males and 304,235 are females. According to it the percentage of literacy is 70.2%.

The total rural population is 719564, in which 487848 (67.79%) are literates among it 57.02% are males and 42.97% are females.

The total urban population is 267693 with 205220 (76.66%) literacy among it 53.90% are males and 46.09% are females.

1.4.5 Agriculture Land and Cultivation

The district has 130615 Hectares of Agriculture Land for Sowing and 21050 Hectares as Fallow land. The Net area irrigated is 25365 Hectares through Tube wells.

Category	Type	Devanahalli	Doddaballapura	Hoskote	Nelamangala	Total in Hectares
Grains	Paddy	294	260	495	564	1613
	Ragi	7568	11184	11483	12739	42974
	Bajra	4	-	-	-	4
	Maize	895	11556	217	1883	14551
	Total Food Grains	10267	24813	14376	16915	66371
Pulses	Total Pulses	1498	1807	2181	1726	7212
Oil Seeds	Total Oil Seeds	389	522	632	201	1744
	Other Oil Seeds	359	980	2566	351	4256
Fruits	Mango, Gauva, Sapota, Papaya, Banana, Grapes, etc.	2028	2833	4075	1650	10586
Vegetables	Total Vegetables	1066	1675	4087	553	7383
Sugarcane	Total Sugarcane	2	-		2	4

The Total Food Crops cultivated on 130615 (Ha) and Total Non Food Crops are cultivated in 45051 (Ha).

The non-agriculture and agriculture land located adjacent to the Bengaluru Urban District is fast changing into commercial and residential areas. In near future there will be hardly any agriculture land left for agriculture purpose.

It is noticed industries and residential areas are occupying fertile agriculture lands and non fertile lands and no water source lands are remaining as agriculture lands in the district. This trend may lead to unemployment, loss of live stock, loss of agriculture produce and increase in the cost of living in near future.

INDUSTRIES

There are 340 Small scale industrial units are registered in 2012 & 2013. Total SSI in the distrct are 1394 units as of 31st March 2013. The industries are involved in sectors such as Ready Made Garment, Textiles, Chemicals, Engineering, Automobile, Electrical & Electronics, Ferrous & Non Ferrous, Ferrous & Intoxicants, Glass & Ceramics, Job Works & Repairs, Leather, Mechanical Engineering, Paper & Printing, Rubber & Plastics, Wood, and Others with total strength of 18268 workers as per 2012-2013.

Number of Factories as on 31 – 03 – 2013							
	Ready Made	Textile	Chemical	Engg	Others	Total	Employees
Devanahalli	1	1	2	6	8	18	2129
Doddaballapura	15	9	17	30	89	160	31680
Hoskote	4	5	23	60	73	165	17643
Nelamanagala	11	0	27	56	104	198	35241
Total	31	15	69	152	274	541	86693

Transport - Roads, Railways, Airport

As of 31-03-2013 the district has 205 Kms National Highways, State Highways of 194 Kms., Major District Roads of 650.6 Kms., other district roads of 38 Kms. The district also has Panchayath Roads of 2469.81 Kms., and Municipality Roads of 227 kms. The district has railways without much change in the past 20 years in the length of the rail network. The district houses One International Airport (BIAL) and One Indian Air force Airport in its jurisdiction. Both the Airportr are located in Devanahalli Taluk. The International Airport services several million passengers every year.

1.4.6 Electrification (as on 31st March 2013)

All villages in the district are provided with electricity under various government schemes, subsidies are given for agriculturist using pumps to lift water from tube wells for the purpose of irrigation. Total No. of domestic connections in the district are 358447, total industrial connections are 15873, total Commercial connections 42122 and 4521 street lights.

Mine Minerals

The district predominantly known for its natural reserve in Doddaballapura, the Stones mined are used for purpose of construction and buildings, the total quantity of stones mined in 2008 – 2009 are 1072420 Tones with a market value of Rs.2,85,14,625.00 and a small quantity of 1963.515 cubic meter of stones mined in Nelamangala during 2008-2009 are ornamental stones with market worth of Rs.29,44,5273.00.

Education Facilities

In the district as on 31 March 2014;

1333 Govt. Primary Schools having 53368 Boys and 51126 Girl students
213 Govt. High Schools having 21793 Boys and 20916 Girl students
42 Pre-University Colleges having 6110 Boys and 7405 Girl students**
06 Govt. Degree Colleges having 2269 Boys and 1692 Girl students**
02 Private Degree Colleges having 801 Boys and 814 Girl students **
01 Polytechnic having 126 students**
06 Engineering Colleges Private having 1065 Students**
01 Medical College having 38 Boys and 62 Girl Students**
01 Indian System of Medicine College 59 Boys and 90 Girl Students**
05 Rural Library Branches, **01** Community Library for children in District, **98** Gram Panchayath Libraries and 2 Slum Libraries.

**** 2011 & 2012 data**

1.4.7 Medical and Health Services

In this district, health & family welfare centres are 4 Govt. Hospitals each in one Taluk with 160 Beds, 53 Govt. Hospitals with 511 beds managed by 82 doctors, 31 Private Hospitals (including Nursing Homes) with 212 Beds, 47 Primary Health Centres with 291 Beds, 2 Community Health Centres with 60 Beds, 5 Family Welfare Centres with 198 Beds. In this district there are 362 Drug shops and Two Blood Banks. Immunisation of DPT is given for 19639, Polio for 19861, B.C.G for 15755, Measles for 19274, T.T for 26466 and Hepatities 'B' for 19815 as of 31 March 2013.

In this district, the Aids, Leprosy, T.B., Malaria & Eradication, Cataract Operations and Programmes are administered in the following order as of 31 March 2013.

Taluk	**AIDS Control Programme**			**Leprosy Control Programme**		**T.B.Control Programme**			**Cancer Control Programme**		
	HIV+	Cured	Deaths	No. of patients	Cured	T.B. +	Cured	Deaths	Cancer +	Cured	Death
Devanahalli	32	35	12	5	12	216	174	15	3	0	
Dbpura	82	43	3	3	2	367	341	36	6	0	0
Hoskote	100	69	10	3	4	354	269	23	4	0	0
Nelamangala	61	48	5	7	10	219	214	14	0	0	0
	275	**195**	**30**	**18**	**28**	**1156**	**998**	**88**	**13**	**0**	**0**

1.4.8 AMBULANCE SERVICES

The district has 12 Nos. of Ambulances, in the following categories;

(A) <u>Details of Ambulance service available in District (Taluka Wise):</u>

Sl.No.	Taluka	Name of Office	No. of Ambulance
1	Devanahally	Taluk Hospital	1
2	Hoskote	Taluk Hospital	1
3	Doddaballapura	Taluk Hospital	4
4	Nelamangala	Taluk Hospital	3
	Total		9

(B) Details of EMRI – 108 Ambulance services available in District (Taluka Wise)

Sl. No.	Taluka	Nos.	Address / Location.
1	Devanahally	03	CHC Vijayapura PHC Avathi, PHC Budigere
2	Hoskote	03	Tq Hospital Hoskote, PHC Nandagudi, PHC Anugondanahally
3	Doddaballapura	03	Tq-Hospital D.B.Pura, PHC S.S. Ghati, PHC Doddabelavangala
4	Nelamangala	03	Tq-Hospital Nelamangala, PHC Dabaspet, PHC Thyamagondlu

Total EMRI – 108 Ambulances = 12

1.4.9 Proposed Disaster Mitigation Projects:

- Manufacturing, Storage and Transportation Policy & Protocol for HAZMAT, Chemicals, Toxic Chemical, Bulk Drugs, Chemical Waste, Non Bio Degradable Waste, and Wet Waste in the District.

- Ground Water Improvement: The district needs a detailed Analysis of Ground Water Table to identify and develop ground water charging points. District being a drought area, the entire district population and livestock are depended on ground water, it is vital to rejuvenate the depleting ground water table. This is proposed to help us develop sustainable and scalable resources to develop mitigation plans for self sustainable water table in the district.

Section – 2 Concepts and Polices

What is a District Disaster Management Plan ?

Disaster causes at times sudden disruption to normal life of a society and causes damages to property and lives to such an extent that normal social and economic mechanisms available to the society get disrupted.

In such cases, the existence of a disaster management plan plays a vital role. This would help the functionaries to respond, to issue directions to the officials and stake holders for effective management. District Disaster management Plan (DDMP) is a document that allows the district administration to know its past, present, projected future, history, facts & figures, stake holder details, participating agencies, trained resources, material resources, list of sensitive establishments, vulnerable communities, performance report, do and don'ts, contact information etc. all this is required to understand for building an effective response system. However, it is felt that a scientifically comprehensive and holistic look at disaster profile whether natural or man-made is imperative for Incident response action plans.

The district plan contains the objective, profile of the district, resource inventory equipment and human resource, preparedness and mitigation strategy and standard operating procedures for the District Disaster Management Committee.

2.1 Preparation and Revision of the District Disaster Management Plan.

The District Disaster Management Committee, headed by the District Commissioner is responsible for developing the DDMP in collaboration with the line departments and other organizations before any hazard season based on the vulnerability of the district. They are also responsible for updating of the DDMP before all possible hazard season. DM Plan has to be approved by the DDMC.

The Plan should be reviewed annually and updated:

- When significant changes in the nature of any hazards
- Lessons learnt following any Major Disaster or
- When there is any significant change to organisation or responsibilities of primary members of the task forces defined in the plan.

The revised plan should be submitted to KSDMA and the Relief Commissioner.

District Disaster Management Committee

While developing the district disaster management plan the District Commissioner will call a meeting of suggestive members on the above and form the district disaster management committee under his/her chairmanship. The district disaster management team has to form with all possible line department officers to carry out various activities during normal time, pre disasters, during and post disaster. The possible suggestive district disaster management teams for a district based on the need: Information management team, rescue and evacuation team, emergency health management team, food relief, feed, fodder, and civil supply team, transportation management team, infrastructure management team, animal resource management team etc.

2.2 Purpose

This document provides basic information required for the management of disasters in the Bengaluru Rural District, and Defines the Risks and Vulnerabilities of the citizens of the district to different disasters, supporting responsibilities to reduce or negate these vulnerabilities and actions to be taken to avoid or mitigate the impact of possible disasters in the district.

Approach to Disaster Management

The Government of Karnataka takes a comprehensive approach to disaster management. Disaster impact reduction is divided into two broad areas:

- Warning, Relief and Recovery, focusing on plans and actions necessary to reduce the impact of quick-onset disasters or speed the response to slow–onset disaster &
- Mitigation, Preparedness and Prevention, focusing on plans and actions to avoid or eliminate the causes or impacts of hazards or threatened disasters.

The overall approach to disaster management is based on six elements;

- Accurate risk and vulnerability assessment,
- Planning and efficient allocation of resources,
- Capacity building and training,
- Provision of adequate resources,
- The assignment of disaster management roles and responsibilities which correspond to normal roles and responsibilities (if possible) and,
- Use of diverse legal and operational mechanism to accomplish disaster management objectives.

2.3 Policy and Responsibilities (Warning, Relief, Recovery and Rehabilitation)

Warning, Relief and Recovery actions are intended to eliminate the loss of life and property and hardship due to disasters. Plans and SOP's at District level should provide as seamless as possible provision of warning, relief and recovery assistance to avoid or reduce losses and hardship.

The focal point for early warning, relief and recovery is the District Commissioner, who directors and coordinates these efforts within the district. The DC will coordinate warning, relief and recovery with similar activities in neighboring districts and with the KSDMA and Revenue Department.

The DC is further responsible for developing long term relief, recovery and rehabilitation plans during the course of a disaster. These plans will include steps to reduce disaster impact in the future and be coordinated with the KSDMA in terms of policy and implementation.

Mitigation, Preparedness and Prevention

Mitigation, preparedness and prevention actions are to be taken before a disaster to reduce the likelihood of a disaster (risk reduction) or the level of damage (vulnerability reduction) expected from a possible disaster. Vulnerability reduction is given priority over a risk reduction. The district van avail itself of four mechanisms (singularly or together) to reduce risk and vulnerability;

- Long terms planning for mitigation, preparedness and prevention investments in the district,

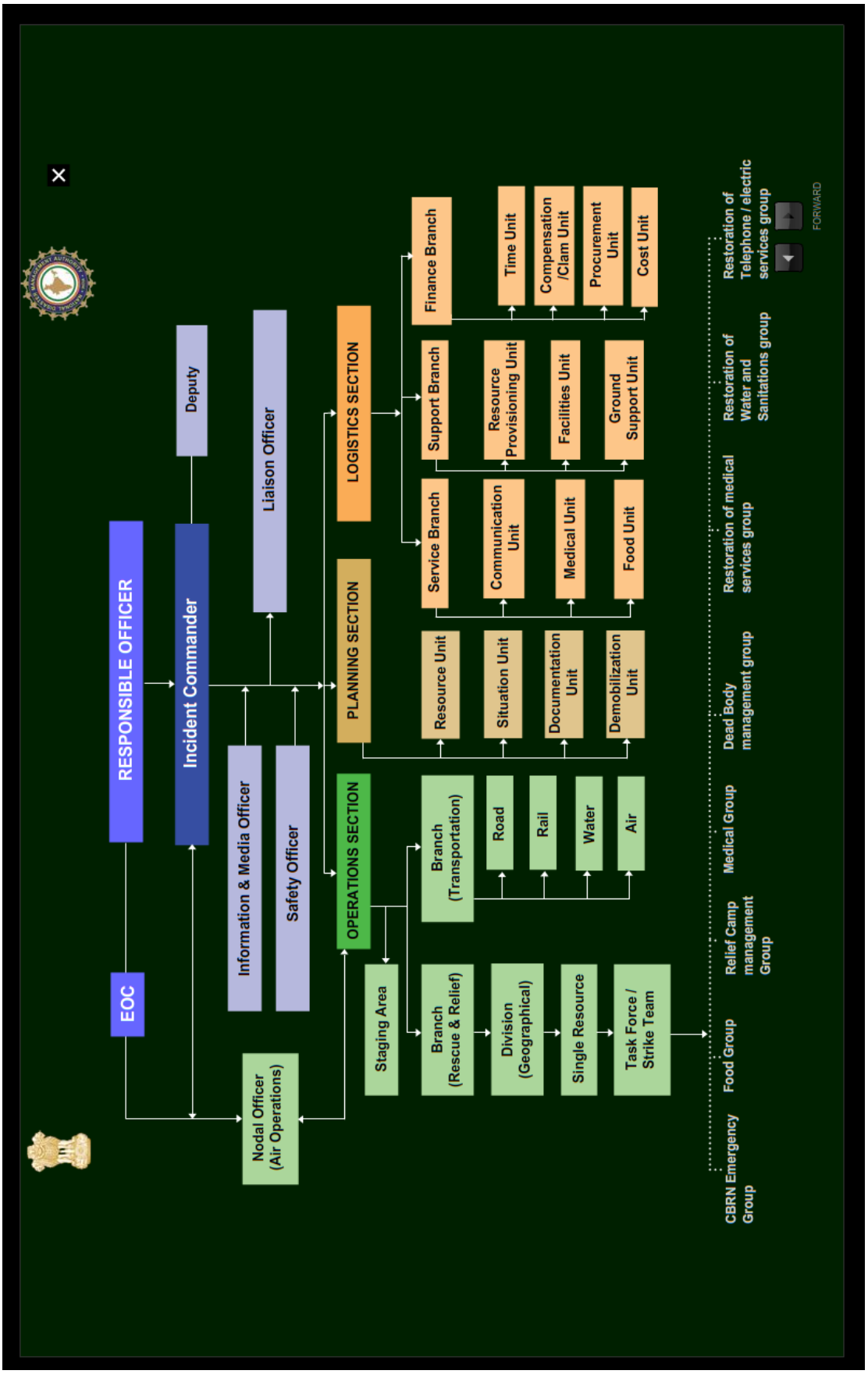
- Enforcement of regulations, particularly building and safety codes and land use plans,
- Review and evaluation of development plans and activities to identify ways to reduce risks and vulnerability, and,
- Capacity building, including warning, the provision of relief and recovery assistance and community-level identification of risk and vulnerability.

The DC, assisted by the District Development Officer, is responsible for developing plans and activities to effect mitigation, preparedness and prevention using the mechanism noted above.

Bases on the interim assessment of risk and vulnerabilities, the District will focus on the following areas for mitigation preparedness and prevention;

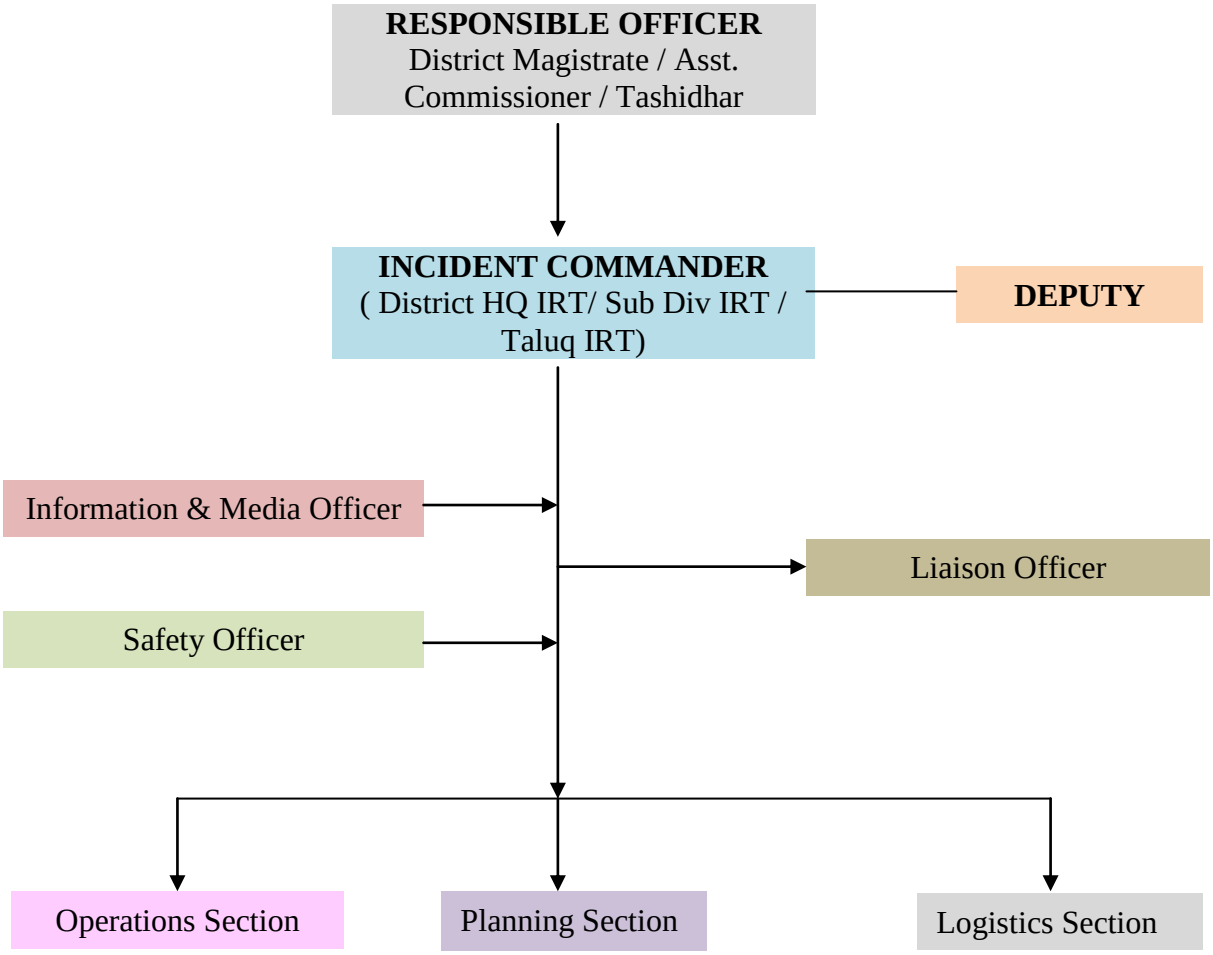
- Resilience of lifetime systems (water, power and communication)
- Reduction in disaster impact on health care facilities, schools and roads
- Vulnerability reduction in flood-prone areas
- Vulnerability reduction to accidents on National / State / District Highways / Railways / Airports while transportation of Flammable and Hazardous chemicals
- Vulnerable reduction to control spread of Epidemics (Chikengunia, H1N1, Influenza, Dengue, Malaria and HIV)
- Vulnerable reduction to control spread of Epidemics in Live Stock (Mad Cow, Poultry)
- Improvement of off-site Preparedness near Industrial sites, Petroleum Storage Depots, Chemical & Toxic Gas Storage & Manufacturing plants, Airports, Bus Stations, Railway Stations, Markets, Schools & Colleges, Govt. Institutions, Power Grid Stations, Scientific & Defence Establishments, Water Tanks, Rivers and Large Ponds.

2.4 District Level Functional and Operational System Chart

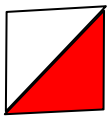


2.5 Incident Response Team (IRT)

The IRT operational structure remains same at all levels, the IRT is headed by a Responsible Officer (State Level : Chief Secretary, District Level : District Magistrate, Sub Division Level : Asst. Commissioner, Taluq Level by a Tashildar). The functional system flow chart is as listed below;



2.6 FACILITY SIGNS FOR DISASTER RESPONSE TEAM

INCIDENT COMMAND POST (ICP) 

STAGING AREA (SA)

INCIDENT BASE

CAMPS

RELIEF CAMP (RC)

HELI BASE

HELI PAD

SECTION – 3

HAZARD, RISK and VULNERABILITY ANALYSIS of the DISTRICT

3.1 VULNERABILITY AND RISK ASSESSMENT

There are instances of many man-made disasters such as terrorist attacks, riots, strikes, incidents of fire (burning of buses and vehicles at the time of strikes) and Road and Rail accidents.

Proneness to different disasters:

Hazards	Probability Rating	Impact Rating	Vulnerability Rating	Vulnerable Areas / Taluks
Earthquake	1	1	1 (Low)	Zone (II/III) Entire District
Drought	4	4	4 (V.High)	Any Where in the District
Flash Floods	1	1	1 (Low)	Any Where in the District
Fire	4	4	4 (High)	Any Where in the District
Industrial Accidents	2	3	4 (V.High)	Any Where in the District
MHU	2	4	4 (V.High)	Devanagunty, Hoskote
Pipeline (Petrol, HSD etc.)	2	4	4 (V.High)	Devangunthy to Chennai and Devangunthy to Managalore
MHU	2	4	3(High)	Nelamangala & Devanahalli
Transport of Chemicals & Toxic Waste	2	3	3(High)	Any where in the District
Textile Park	1	4	3 (High)	Doddaballapura
Food Poisoning	2	4	3 (High)	Any Where in the District
Garbage & Waste Dumping	4	4	4 (V.High)	Hoskote, Nelamangala, Doddaballapura
Epidemics	4	4	4 (V.High)	Any Where in the District
Building Collapse	1	2	2 (Medium)	Any Where in the District
Animal Disease	2	4	3 (High)	Any Where in the District
Air Accident	1	4	3 (High)	Devanahalli and Hoskote
Terrorist Attack	2	4	3 (High)	Devanahalli, Hoskote
Civil Unrest	1	2	1 (Low)	Any Where in the District
Hazmat Transportation	2	4	3 (High)	Any Where in the District

Capacity Building, Risk Study Report and IRS Requirement

The existing capacity in terms of human resource, materials and machines necessary for disaster preparedness before, during and after the disasters are inadequate when we refer to MHU's and Pharma & Chemical Manufacturing Units are concerned.

During the Risk study in the District, it is identified that the villages located in the pheripheryof Major Hazard Units of HP, IOCL, BP in Hoskote Taluq, Devanagonthi are most vulnerable for extreme threat to life, livestock, and property in disaster situation. After assessing the awareness level of the sourrounding villages and causal labour working in MHU's it is strongly felt sensitization of disaster awareness is required on a pilot program. The villages are concerned, multiple level of Awarness programs and community drills may be required. In the following order; 1. Vulnerability Identification, 2. Analysing Emergency Situations, 3. Vulnerable localities to be trained for emergencies, 4. Live Stock Management during disaster, 5. Sr.Citzens, Infants, Sick and disabled Management during Disaster, 6. Identification of Temporary Sheltering locations 7. Identifying and marking Fire prone Material 8. Regular check and update of First Aid kits, 9. Emergency transportation reserves for evacuation to sheltering areas, 10. Maintenance of Potable Water Reserves etc. etc.

The Risk study also recommends Incident Response System (IRS) for the above refered MHU's on Highest Priority. It also recommends IRS system to be implemented on a realtime basis covering all Functional and Operational Inter Department connectivity, Physical Resource and location maps, Expert Resources, expertise details and online libraries, Medical resources and capacities.

Storage of food

All the Gram Panchayat offices are being used as storage points when need arises. Secretaries of Gram Panchayats and Asst. Directors and Deputy Directors are the contact persons. Adequate quantity rice/ragi has been kept for distribution to the victims in the godowns. These locations could also be used as storage points for medicines, blankets etc.

3.2 IMPORTANT DEPARTMENTS AND ORGANISATIONS

All the departments working under the D.C. such as S.P., A.C., Tahsildar, S.E/E.Es of PWD/Irrigation, Commandant, Home Guards/Fire Force Officer, DHO, Municipal

Commissioner/Chief Officers, etc., are connected with telephone (both external and internal), VHFs will be installed. All the line departments are directed to keep themselves ready as per the guidelines mentioned in this plan. NGOs and private sector agencies including private firms and industries are asked prepare themselves with disaster management plans. The resources available with different agencies are identified.

Administrative preparedness

The following steps have been taken to combat any eventualities during and after the disaster situations.

1) DC will be overall in charge of the disaster management in the district and could delegate any of the powers to other officers in the district.
2) Control Room will be functioning round the clock in the DC office, SP's office, Tahsildar's office with adequate facilities staff exclusive members assigned with the job.
3) The respective Taluk Tahsildars are working as taluk level incident commanders for managing the disasters.
4) Superintending Engineer of Irrigation department will be assigned the overall responsibility of flood management and rainfall data management.
5) SE, PWD has been assigned the overall responsibility of setting up of site operations centre during the disaster situation and provide all the necessary facilities.
6) Transport Department/KSRTC is in charge of providing the vehicles necessary for managing the response activities.
7) DHO is in charge of providing the necessary medical facilities such as Medicine, Ambulances, Statures at medical relief camps, mobile medical teams ready for the purpose.
8) SC, MESCOM/KPTCL is in charge of providing electricity supply during disaster situations.
9) Flood and Civil supplies officers have been directed by the DC to store adequate foodstuff at vulnerable areas and strategic points.

10) SP has been directed by the DC to set up and monitor the wireless stations and make arrangements to seek army assistance if required.

11) The SE/PWD; SE, Irrigation have been instructed to carry out the repair works of dams, canals, river embankments, bridges, old and unsafe buildings immediately and before the rainy season ever year.

12) City Municipal Commissioner and the Chief Officers of the respective Town Municipalities have been asked to clean the drains, manage solid and water wastes, supply of water, provide sanitary facilities and all the civic facilities needed for effective management of urban disasters.

13) Some NGOs in the district working at the levels of taluks and villages are asked to collaborate with local administrations to carry out the relief, rescue operations and rehabilitation activities.

14) HAM radio sets with operators are instructed to be ready.

15) The Deputy Director and Assistant Director of Veterinary Department are asked to keep the medicines ready to protect the animals against contagious diseases and medicines supplied to the field functionaries for routine treatment.

16) Review of pre-disaster arrangements has been carried out and contingency plan for the district has been provided to all the heads of the departments in the district.

The resources available in the district with both private and Government have been compiled.

The list of vital installations such as Dam, transformers, telecommunication centres, wireless relay stations etc., have been provided with protection and security and the same will be intensified during disaster.

3.3 PREVENTION AND RESPONSE STRATEGIES

Officers are responsible to ensure proper preventive and response measures before the disaster (in anticipation), during the disaster (concurrent stage) and after disaster (post disaster stage). These measures are integrated into the preparedness and response plan. The mechanism for co-ordination, monitoring and supervision of prevention, rescue and relief operations are clearly specified.

The respective sugar cane industries and other industries and all the private factories have prepared their on-site disaster management plan as per the Factories Act.

Weak points in the river embankments which require constant watch at the time of monsoon. The irrigation Department is ready with the plan to face any eventuality of breaching of reservoirs, embankments, etc., which may result in flood. EE has been instructed to keep the channels/nalas clean for free flow of water before the onset of monsoon.

The Department of Agriculture is ready with contingency plan for crop loss or drought situations. Pests and fertilizers are available during any disaster situation. Field staffs are alert to help the farmers to protect their crop.

The Forest Department has got plan for prevention of forest fire or any kind risks due to vulnerability of any kind to forest in the district.

Relief and Rescue Operation

Rescue work will be taken up by the local police, home-guards, fire force along with local villagers and volunteers.

In case severe distress due to natural calamities like high flood or earthquake, emergent relief such as temporary shelter, rice, dal, potato, salt, kerosene, matchboxes, toothpaste, soap, milk, clothing, blanket, etc., will be arranged from the identified traders and sources.

Supply of Fodder

Fodder of at least 1 kg/animal per day up to maximum of 3 days will be stocked and provided. The Revenue and Veterinary officers will be in charge

Post Disaster Measures

1) Damage assessment by the respective officers.
2) Immediate restoration of infrastructure facilities.
3) It is to be examined if labour intensive works are required be undertaken to provide labour in the affected pockets.
4) Disposal of carcasses to be immediately taken up to prevent epidemics by the Deputy Director/AD of Veterinary Department.
5) DHO will take immediate steps for disinfections of drinking water sources.

6) Supplying potable water will be taken up by the Local Bodies.

Post Disaster Evaluation Measures

Private properties and properties of the government under different departments are also damaged by the natural calamity. Assessment in such cases has to be done quickly by the officers.

Assessment of crop damage

District Agriculture Officer such as Joint Director or Deputy Director or Assistant Director will have to undertake immediate survey of the damages as outline below;

a) Area covered under different groups.

b) Approximate loss of crops.

c) Cropping pattern, Rabi or Khariff.

d) Requirements of seeds, seedlings, fertilizers, pesticides, etc., to be assessed.

e) It is to be examined if seeds/seedlings can be supplied to the affected cultivators at subsidized rates.

f) Availability of seeds/seedlings etc. and procurement of pump sets.

g) Funds needed, funds available and not additional requirement

3.4 REHABILITATION

House damage in the wake of major disaster in the rural areas presents a serious problem. As these houses are generally mud built with thatched roof, the worst sufferers are the economically backward people who normally reside in vulnerable prone areas of these villages. Rehabilitations schemes are undertaken to provide housing to as many people as possible after a devastating disasters. Such houses are either to be located on the land allotted by the government or in their own safe land.

- Taluk Panchayat Officer and Engineers could visit the sites suitable for housing purposes in a village during normal times and if the people living in vulnerable prone areas are willing to shift to new sites. They can obtain their willingness in writing and furnish such lists to the AC/DC.
- The house shall be built according to the requirement of beneficiaries and their pattern of living subject to financial limitation. The people must involve themselves in the housing programme.
- For this purpose, facilities available under Ashraya, Indira Awaas Yojana schemes etc., should be availed of.

3.5 RESTORATION

The restoration programme may involve two stages of works. In the first stage some repairs are immediately necessary to avoid further deterioration for making the works worthy for immediate use. Restoration of communication power supply, hospital facilities, water and sanitary arrangements are some of the programme, which may come under this category. The concerned departments of government may lay down priorities in the restoration programme having regard to the necessary and availability of funds.

1.	Executive Engineer, PWD; DCF, Forest Department	They will take steps for clearance of fallen trees and departmental buildings from the roads for free movement of vehicles etc. Immediate repair of roads and bridges be taken up.
2.	BSNL	Immediate restoration of Telephone services.
3.	DD, Veterinary Dept.	Removal and disposal of carcasses, vaccination, cattle treatment, supply of fodder, etc.
4.	DHO	Disinfections of water sources & treatment etc.
5.	Agriculture Dept.	Treatment of saline inundation fields. Supply of seeds in area where crop has been damaged.
6.	KUWS & DB; Municipality & Panchayats	Repair of damaged tube wells/installations of new tube wells.
7.	KPTCL	Immediate restoration of power lines.

3.6 ROLE AND RESPONSIBILITIES OF THE DEPUTY COMMISSIONER AND DISTRICT MAGISTRATE

Phase	Activities	Other officials to be involved	Resources/ equipments to be procured from
Pre-Disaster	Preparedness before the disaster	All district level officials	The Secretary, Dept. of Disaster Management.
During disaster	Reviewing and analyzing the calamity situation in the district over the next one year through a meeting at the district level involving all the departments of the district as well as sub division and GP levels and the locally active NGOs/CBOs	All ACs; All Tahsildars; All Panchayats	Police/Fire/Fisheries/RTO/ Civil Defence.
	✓ Identifying disaster prone zones and strategies to stay prepared for the worst.	Field functionaries, District Information Officer.	Commandant/Co-Coordinator of NCC/NSS/NYKS
	✓ Ensure IEC through Emergency section/ Panchayats/NGOs/AW centers/Street plays/ workshops	District Fisheries Officer Leading NGO/CBOs	
	✓ Reviewing the DCR and making it functional as per SOP fixed by him (SOP to be prepared earlier)	NSS/NCC/NYKS/ Police	VHF from the Police/Mike set/ batteries/generators available in the district office from the private parties on requisition.
	✓ Making the DCR well equipped and depute senior officers from time to time to review the receipt of information and dissemination.	Fire, Civil Defence	
	✓ Calling a meeting of officers/NGOs/CBO co-ordination and discuss issue such as capacity assessment of different NGOs/CBOs and ask them to adopt certain vulnerable areas to avoid overlapping and duplicity.	All district level officials. All ACs/Tahsildars	
	✓ Preparing a checklist (containing the dos and don'ts) and pass that on to the NGOs/CBOs.	All Panchayats District Fisheries Officer	Power boats/country boats/ vehicle/rope/rescue kits and trained resource personnel from

		Leading NGOs Police	SRC/SSC/Army/unit/Civil Defense/Hired from the private parties according to the requirement.
	✓ Ensuring/installing communication system to the inaccessible villages	Police Fire Brigade, Leading NGO, Panchayats, Field functionaries programme coordinators of NSS/NCC.	
	✓ Checking stock of the public distribution system and arrangement of temporary godown. ✓ Checking the resources with other department such as Police, Fire and of NSS/NCC/NYKS.	ACs/Tahsildars, TPEO, DHO, CDPO, DDs, Panchayat Field functionaries Medical Officers, Police, KUWSDB, Municipality, RTO/ Leading NGO.	
	✓ Preparing a list of vehicles/ ambulance already deployed and/or to be deployed on hire during crisis.		
	✓ Keeping stock of road cleaning equipments and vehicles for relief operation.		
	✓ Assigning specific duties to different officers/ Sr. Officers at headquarters.		
	✓ Staying in constant touch with other line departments.		
	✓ Ensuring proper functioning of warning systems & communication systems.		
	✓ Ensuring mock drill of the rescue and relief teams	Home guards, Police.	
	✓ Preparing a map showing the location of temporary		

	shelter camps with accessibility. ✓ Identifying shelter/temporary shelter in high elevated places and arrangement of tents etc. ✓ Identifying and mapping of disaster (of all kinds) prone areas Ensuring formation of village level Disaster Management Committee through Block Development Officers		
	Dissemination of warning: - ✓ Receiving warning from reliable sources and cross checking them for authenticity. ✓ Disseminating warning to District Level Officials/ Revenue/Field Functionaries/ PRIs and Co-ordination with the Revenue control room. ✓ Keeping the control room active round the clock. ✓ Disturbing duties to the district level officials, ACs Panchayats and Field functionaries.		
	✓ Arranging vehicles and public address systems for information dissemination.		
	✓ Establishing coordination with the NGOs/CBOs and the village communities and assigning them duties.		
	Asking the people in the vulnerable areas to move to the shelters and to move their domesticated animals to safer places and to cooperate with the volunteers and other officials engaged in similar activities.		
	Search, Rescue and Evacuation:- ✓ To coordinate with NGOs/ CBOs/Police for support. ✓ Arrangement & deployment of vehicles etc., for evacuation. Evacuating people from marooned areas and administer emergent relief		
	✓ Organizing trained taskforce members and deputing to be marooned and cut-off areas for evacuation.		

	✓ Deployment of police for maintaining discipline and peace keeping during evacuation. ✓ Mobilizing people to move to safe shelters. ✓ Deployment of police/Fire Brigade for search and rescue. ✓ Ensuring proper utilization of the rescue materials. ✓ Providing rescue kits at the affected areas.		
	Distribution of Relief Materials: - ✓ Keeping a record of the affected area and people so as to account for the relief materials needed. ✓ Procurement and transportation of relief materials to affected areas.		
	✓ Arrangement of free kitchen in the shelter camps & affected areas and assigning the responsibilities to officials for proper distribution.		
	✓ Coordinating with the NGOs/ CBOs. ✓ Encouraging other voluntary organisations from outside for rescue and relief operation. ✓ Distribution of basic medicines and disinfectants to prevent epidemic. ✓ Ensuring health care activities by the CDMO in the shelter camps & through mobile units/temporary health in regular intervals. ✓ Ensuring cattle health activities by the CDVO through Mobile units/ temporary health camps in the affected areas. ✓ Ensuring that there is enough storage of food and pure water in the shelters.		
	✓ Monitoring all the activities in the affected areas.		
Post disaster	**Short term measures: -** ✓ Formation of special task force with required equipments ✓ Assigning responsibilities for specific areas.		

	✓ Emergency cleaning of debris to enable reconnaissance.		
	✓ Cleaning fallen trees and branches from the roads to facilitate local relief work. ✓ Forming a work team carrying emergency tool kits. ✓ Deployment of towing vehicles, earth moving equipments, cranes. ✓ Construction of temporary roads. ✓ Keeping national and other highways clear from disaster effects.		
	✓ Assessment of damage. ✓ Temporary supply of flood drinking water and medicines to the shelters and affected areas.		
	✓ Arrangement for safe shelter for animals. ✓ Providing the lighting facilities for shelter places. ✓ Deployment of home guards and constables to maintain law and order. ✓ Providing temporary arrangements for income generation for the affected people. ✓ Drought resistance short duration paddy seeds to be made available to farmers.		
	✓ Encouraging NGOs/INGOs from outside to carry out restoration and reconstruction works. ✓ Ensuring crop insurance. ✓ Supervising all the activities.		
	Long Term Measures: - ✓ Immediate restoration of road communication, irrigation system, educational institutions, Government institutions, electrical installation, drinking water supply, construction of IAY houses for the BPL families and massive area plantation to maintain ecological balance.		
	✓ Meeting with district level officials/Officials at Headquarter and chalk out emergency plan with vulnerable areas and resource list. ✓ Co-ordination meeting NGOs/ PRIs and		

	assignment of duties. ✓ Pre-positioning of staff in the likely cut off areas.		
	✓ Arrange food and other basic requirement for emergency response. ✓ Collect information from different areas and to act accordingly.		
	✓ Co-ordination meeting with officials at Headquarters by 12 hours intervals and 24 hours intervals with the field officials. ✓ Regular collection of situation report of the risk and vulnerable areas from the officers assign for the purpose.		
	✓ Provision for administering emergent relief and the other basic needs. ✓ Contact with SRC for supply of temporary shelter materials. ✓ Keeping in touch for supply of food articles procuring whole sellers. ✓ Deputation of volunteers to different probable affected areas.		
	✓ Helping the evacuees for returning to their houses. ✓ Immediate arrangement of free kitchen in the cut off and inaccessible areas. ✓ Relief distribution. ✓ Monitoring of relief distribution. ✓ Provision of drinking water.		
	✓ Provision of medical facilities. ✓ Repair/restoration of roads. ✓ Transportation of relief and human resources.		

3.7 Role and responsibilities of the District Health Officer (DHO)

Phase	Activities	Other officials to be involved	Resources/ equipments to be procured from
Pre-Disaster	**Preparedness and warning dissemination: -** ✓ Stock piling of life saving drugs/ ORS packets/Halogen tablets on receipt of warning from the Collector/DCR. ✓ Transmission of messages to all PHCs to stock medicines and keep the medical staff ready. ✓ Disease surveillance and transmission of reports to the higher authorities on a daily basis. ✓ Vaccination. ✓ To obtain and transmit information on natural calamities from the DCR. ✓ Ensuring distribution of areas of operation among the mobile team. ✓ Pre distribution of basic medicines to the people who are likely to be affected. ✓ Shifting the patients who are in critical situation to the district hospital. ✓ Awareness messages to stop the outbreak of epidemics. ✓ Conducting mock drills.	DHO, Medical Officers of PHCs/ ICDS, CDPOs NGOs, CBOs, private practitioner in the locality/ first aid trainers.	Medicines, required medical equipments, First aid kits, ambulances, public address systems, mobile vans, tents.
During disaster	**Rescue and Evacuation: -** ✓ Constitute mobile teams and visit the worst affected areas. ✓ Disinfection of of drinking	DHO, Medical officers of PHCs, ICDS, CDPOs, NGOs, CBOs, private	Medicines, required medical equipments, first aid kits, ambulances, ambulances, public address systems, mobile vans, tents

	water sources. ✓ Opening of site operation camps. ✓ Regular health check-up at shelter camp & affected areas. ✓ Assigning responsibilities to the medical officers for close monitoring of health camps.	practitioner in the locality, first aid trainers Rescue team, volunteers at the shelters, police, fire officers, trained volunteers.	
Post disaster	**Restoration and rehabilitation: -** ✓ Organization of health camps. ✓ Deploying mobile fully equipped and manned medical vans. ✓ Close monitoring of health camps. ✓ Ensuring adequate quantities of medicine/disinfectants. ✓ Making sure that there is no outbreak of water borne diseases/malnutrition. ✓ Co-ordination with the District Rehabilitation Committees, other line departments, NGOs/ICDS projects, village Committee, PHD, RWSS, etc.	DHO, Medical officers of PHCs, ICDS, CDPOs, NGOs, CBOs, private practitioner in the locality, first aid trainers Rescue team, volunteers at the shelters, police, fire officers, trained volunteers.	Medicines, required medical equipments, first aid kits, ambulances, ambulances, public address systems, mobile vans, tents

3.8 Role and responsibilities of the Superintendent of Police (SP):

Phase	Activities	Other officials to be involved	Resources/ equipments to be procured from
Pre-Disaster	**Preparedness and warning dissemination of warning: -** ✓ Reception of warning from the DCR. ✓ Communication establishment with district and sub-division/ GP control rooms and departments offices within the division. ✓ Alerting the team force for deployment at the time of calamity. ✓ To issue directive to police field functionaries to co-operate with revenue personnel in management of relief operation	Home guard/Police forces, AC/ Tahsildars, SIs	VHF, other improved telecommunication systems.
During disaster	**Rescue and Evacuation: -** ✓ Clearance of roads and other means of transportation. ✓ Traffic management and patrolling of all highways and other access roads to disaster sites. ✓ Making sure that discipline is maintained. ✓ Assistance to district authorities for taking necessary action against hoarders, black marketers and those found manipulating relief materials ✓ Co-ordination with fire personnel. ✓ Provision of security in transit camps/feeding centers/relief camps/cattle camps/co-operative food stores and distribution centers. ✓ Safe guarding of	Home guard/Police forces, AC/ Tahsildars, Sis NCC, NSS, trained volunteers local youth, NGOs/CBOs	VHF, other improved telecommunication systems. Rescue kits, vehicles equipments for clearance of roads and other related stuffs.

	belongings of evacuees. **Distribution of Relief: -** ✓ Maintaining laws and order at the shelters and the relief camps. ✓ Co-ordination with military service personnel in the area. ✓ Deploying officers/police personnel to record death cases. ✓ Assisting the community in organizing emergency transport. ✓ Assisting the District Officials/NGOs in distribution of relief materials. ✓ Providing escorts in transit of relief materials to the relief camps/affected areas.		
Post disaster	**Short term measures: -** ✓ FIR of the disasters, the damages and the death cases. ✓ Assisting in collection of damage statistics of private properties. ✓ Maintaining law and order. **Long term measures: -** ✓ Close co-ordination with district administration and local/external NGOs in reconstruction and rehabilitation process. ✓ Assisting the district authority whenever the need arises. ✓ Periodical visits to the affected areas to ensure law and order		Vehicle communication systems.

3.9 Responsibilities of other Line Departments:

Designation of the officer	Duties to be performed in normal time	Duties to be performed after receiving 1st warning	Duties to be performed after the disaster
Asst. Engineer/ AEE, Electrical, KPTCL/ PWD	He should see that the field staff checks the electrical line and replace old materials used in the power supply. He should see that all had wiring in service connections are rectified. He should enumerate the diesel sale available and his jurisdiction and keep it available. He should see that trees, branches etc., fall on electrical lines are out and removed. The field staff should see that electrical supply in the places where landslides may be serving is cut off. The field staff should be in touch with local panchayats and inform the situation at frequent intervals. To provide diesel generators to hospital water works, control room collector's office in case of failure of powers.	On receipt of the 1st warning it should be communicated to all the sub ordinates staff. He should see that all the vehicles under his control be kept in perfect order. Alert the entire staff to return their headquarters and get in touch with immediate requirement. They should give wide publicity that houses consumers should arrange lanterns and battery light for use in case of power is out off.	Restoration of power lines on priority to: 1) Hospital, water supply 2) Control room 3) Railway station and 4) To other office on priority as per list appended. Live wires on ground should be removed promptly. Damaged or felled electrical poles should be immediately replaced and obstructions on roads should be get removed.
Asst.	The branches to canal	1st warning should be	Damages due to hazards

Engineer/ AEE, Irrigation	drain to be closed. The embankments should be strengthened. It should be checked whether the passage bridge and channels are in good condition. The obstruction in the canals if any should be got removed immediately to be enabling free flow of water. The bocks and shutters of the canals are to be checked and satisfied that they are in good condition. Water supply into canals should be out off by closing the sluices. The canals and drains should be free from constructing and they should be made available for free discharge of drain water.	communicated to all the sub ordinate staff and employees. They should be alerted to check whether the canals and drains are in proper condition to allow free flow of water. The situation tour should take their duty places and be readily available.	to government properties, lives of man and cattle etc., should be assessed and reported to Panchayats, Sub-collector concerned immediately.
Fire Officers	The Fire Engineers should alert and other vehicles should be kept in good working condition. Materials required for use in emergency should be indented for and kept in reserve. Message received from public on disaster for help should be	The 1st warning should be immediately communicated to fire stations. The staff should be called on for duty. Full complement of the staff should be available for the vehicles should be obtained and kept in reserve.	

	immediately attended. Keep in touch with each of the other fire stations in the district.		
Executive Engineer, Roads and Buildings	Government buildings should be inspected and necessary repairs to be got executed to withstanding hazards affected. Script for slides, pamphlets and cultural programmers should be got prepared immediately. Arrangements should be made to obtain poster and films by addressing the Director through the Collectors. Public addresses equipment should be obtained kept ready. The community radio sets available in the villages should be ascertained. The names of hamlets where they are not available to be reported. The public should be fully educated regarding the precautionary measures and after disaster through available media. Specific duties should be assigned to the field staff. The field staff should	The 1st warning should be communicated immediately to all sub ordinate officers. Wide propaganda should be arranged. The sub divisional public relation officer should be available at their headquarter and got ready for disaster duty with short notice. Ensures that all community radio sets are in working condition.	Photographs of damages should be taken. The field staff should conveying formation regarding the quantum of disaster, loss of property, lives of men and cattle. They should be posted with up-to-date information and the information should be passed to the Collector immediately.

	proceed to the place of work allotted.		
Regional Transport Officer	List of vehicles running condition to be requisitioned kept ready.	Availability of petrol, oils should be ensured. The RTOs and MVIs should be asked to serve requisition orders on owners of vehicles for duty. Soon after receipt of 1st warning all the public call officers to be informed to instruct the village panchayats, Post Master for dissemination of warning in the villages. All telephone sets to be informed of disaster warning soon after the receiver is lifted from the book as in the case of new year's greetings and to request to telephone users to convey disaster warning to other public. Provision of vehicles	Electricity department for restoration. Roads and buildings for clearance. Restoration of Telephone lines to control room to Collector, Hospital, Fire Station, SP and other offices as per the list appended.
Motor Vehicle Inspector	The MVI/AMVI will report before ADM (Relief)		
Civil Supplies Officers	The Asst. Engineer and Junior Engineers will remain alert.		
Divisional Manager, Telephone	Based on the experience on the previous disasters sufficient number of vehicles should be procured and kept in district headquarters To contact all sub division control room and Collector's Office.		

3.10 SYNOPSIS OF MITIGATION PLAN

Phase	Activities	Officials involved
Pre disaster plan	Identification of disaster prone major accident hazard units and industries involving hazardous processes periodically and update.	Dept. of Factories
	Hazard, risk and vulnerability (HRV) analysis has to be identified and reviewed periodically.	Management, CDC
	All the identified major accident hazard units and industries involving hazardous process are required to develop a comprehensive on site emergency plan co-ordinating the resources available at the site against the HRV	Management, Dept. of Factories and Boilers
	Mock rehearsals shall be schemed to assess the strength and weaknesses in the mitigation procedure.	Management Dept., District Crisis Group
	Hording showing the do's and dont's in the event of emergency shall be displayed at all strategic location around the plant to sensitize the public around the plant.	Management of Industries
	Periodical training on first aid fire fighting and casualty handling during emergencies shall be programmed.	Management Police, Fire Services, Dist. Commandant
	Identification of resources against the HRV	Management
	The vulnerability area shall be periodically checked for its integrity and safe working conditions.	Management, Directorate Fire Services, Factories
	Preparation of Resource directory showing the resources available in and around the industry.	Directorate of Factories, DCG
	Community awareness programmed shall be designed by distributing pamphlets, classes highlighting about the hazards and do's and don'ts in the event of emergency.	Management Police, Fire Services, Dist. Commandant
	Duties and responsibilities of 1st responders' viz., Fire Services, Police, Health, Home guards, shall be clearly defined and shall be informed.	CDC, Police, Fire, Revenue
	Periodical evaluation of resources at the control room	CDC, Fire Services
	Identification of shelters, temporary shelter camps with accessibility and infrastructures	Revenue department
	Identification of routes, rallying posts, parking places	Police, Fire Services
	Listing and documenting the home guards required	Dist. Commandant,

	for law order, assistance to the police assistance at the temporary shelters	Home guards
	Preparation of list of experts to seek their opinion during emergency mitigation	CDC, Dept. of Factories
	Ensuring proper functioning of warning and communication system. Updating of telephone numbers at the control room.	CDC, Revenue
	Identification and listing of hospital - infrastructure facilities	DHO
	Identification and listing of blood banks, medical shops, stockiest	DHO
	Identification and listing of vehicles required for immediate requisition	RTO
	Identification of listing of earth moving equipment, vehicles for transportation and documenting	RTO
	Identifying resources for temporary electricity and lighting arrangement, identification and listing of personnel and support system for immediate action	KPTCL
	Identifying NGOs for deployment to work at the rehabilitation centers and to derive resources	Revenue, CDC
	Identification of any pollution effects due from the disasters and to advice CDC on the next course of action	KSPCB
	Identification and supply of availability of potable water sources, water purification tablets, construction of temporary shelters and maintenance	PHE, Commissioner
	Identification of safe shelters for animals	Veterinary Dept.

3.11 SYNOPSIS OF RESPONSE PLAN

Phase	Activities	Officials involved
During disaster	Disseminating information 1st Responders.	CDC
	Keeping the control room active round the clock.	CDC
	Arrangement of vehicle and public address system for information dissemination.	Police
	Distributing of duties to the district level officials, field functionaries on need basis.	CDC
	Asking the people in the vulnerable areas to move to the shelters and to move their domesticated animals	Fire services, Police, Revenue, Veterinary

	to shelter places and to co-operate with the volunteers and other officials engaged in similar activities.	Dept.
	Informing the hospitals to be ready to receive the injured persons for immediate medical aid, and arrangement of special medical need if required.	Health Dept.
	Constituting of mobile health teams to visit shelters.	Health Dept.
	Arrangement and deployment of Fire Services, emergency response vehicles, first aid fire fighting personnel.	Fire services
	Arrangement and deployment vehicles for evacuation of persons.	RTO
	Arrangement and deployment of Home guards for law and order to work in association with Fire services and police.	Commandant Home guards
	Arrangement of specialized equipment for mitigation.	RTO Management
	Arrangement and deployment of Police for maintaining law and order.	Police
	Traffic management and patrolling to the disaster site.	Police
	Provision of security at the shelter.	Police
	Arrangement for evaluation of water and air pollution due to the disaster.	KSPCB
	Management of deceased.	Revenue, Health

3.12 SYNOPSIS OF RECOVERY AND REHABILITATION

Phase	**Activities**	**Officials involved**
Post disaster	Assessment of damages and preparation of comprehensive damage report.	CDC, Revenue, Management, KSPCB
	FIRE the disaster, the damages and the death cases.	Police
	Maintenance of Law and Order.	Police
	Emergency cleaning of debris to enable reconnaissance.	Management, Fire Service, Police
	Deployment of earth moving vehicles, cranes.	RTO
	Temporary supply of food and drinking water and medicines to the shelter.	Corporation, Health, Revenue

	Arrangement of shelter for animals and other requirements.	Veterinary
	Providing of temporary lighting facilities to the shelters and the disaster area.	KPTCL
	Deployment of Home guards and constables to maintain law and order.	Police, Dy. Commandant, Home guards
	Encouraging NGOs to carry restoration and reconstruction works.	Revenue
	Supervising all the activities	CDC
	Collection of progress reports and furnishing report to the Government.	CDC

Section – 4

Disaster Response and District Incident Command System

The response to disasters in the district will be organized according to the Incident Command System as adapted to conditions in Karnataka State (ICS/KS). The argument for the ICS is that its fundamental elements unity of command, clarity of objectives and efficient resource use are common to the effective response to any disaster.

In Bengaluru Rural District, the District Disaster Management Plan focused on sector specific action plans. The disaster response is led by the District Emergency Operation Centre (EOC) under the command and control of the District Commissioner.

4.1 ICS Basic Functions

The basic functional descriptions for key elements in the district Incident command Systems are described below. Not all these functions need to be filled (activated) in every disaster. But the ensemble of these functions represents all the key tasks which need to be accomplished in a well planned manner and executed in effective and cost efficient disaster response effort.

I. Incident Command :

The Incident Command is led by an Incident Commander, who can be assisted by Dy. Incident Commander. In each incident will have as many commanders and other staff as there are shifts in the incident operation. Shifts will normally not exceed 12 hours at a time and should be standarised to 8 hours each as soon as possible after the start of the incident.

II. Command Staff Units :

Safety Unit :

Responsible for ensuring the safe accomplishment of all activities undertaken in response to the incident. This task is accomplished through incident specific safety guidance documents, reviewing and advising on the safety of plans and monitoring actual operations to ensure safety of personnel and survivors.

Protocol and Liaison Unit :

Responsible for all official visits as well as liaison between the incident command and organization providing personnel or material support being used to manage the incident. The first point of contact for NGO's and others coming to the disaster as well as responsible for managing coordination meetings (some of which may actually be held by taskforces or sections).

Public Information Unit :

Responsible for all media and public information tasks related to the incident. To accomplish its task, the unit can have the following sub units:

- Public inquiries: to handle non media requests for information.
- Outgoing public information : to handle public information dissemination.

- Public opinion feedback : to collect information from the public (incident survivors and the non-affected)
- Media centre : to provide a single point of contact for all media involved in the incident.
- Monitoring and Feedback : to monitor media reports and provide feedback to the incident management on coverage of the incident and to also take corrective measures and issue contradictions if required.

III. Land Order and Other Section

Responsible for assuring the execution of all laws and maintenance of order in the area affected by the incident. The law and order section incorporates law and order taskforce which may be created to deal with a disaster in corporate with Police as determined by the normal mandate for an special duties assigned to the police service.

IV. Operation Section

Responsible for assuring specific operations according to objectives and plans to address the immediate impacts of the incident. Taskforces under the operation section will deal with specific functional tasks, such as search and rescue, the provision of water or shelter. The composition and size of these taskforces depends on the nature of the incident.

The District administration of Bengaluru Rural District has identified 16 expected task forces for key response operation functions that are described below. Additional taskforces can be added under the operations sections as needed by the circumstances of a disaster. Each Taskforce is led by one organization and supported by the other organizations.

Sl. No.	Emergency Operation Taskforce	Functions
1.	Coordination and Planning	Coordinate early warning, Response & Recovery Operations
2.	Administration and Protocol	Support Disaster Operations by effectively completing the paper work and other Administrative tasks needed to ensure effective and timely relief assistance
3.	Warning	Collection and dissemination of warnings of potential disasters
4.	Law and Order	Assure the execution of all laws and maintenance of order in the area affected by the incident
5.	Search and Rescue (including Evacuation)	Provide human and material resources needed to support local evacuation, search and rescue efforts.
6.	Public Works	Provide the personnel and resources needed to support local efforts to re-establish normally operating infrastructure
7.	Food and Relief Supplies	Assure the provision of basic food and other relief needs in the affected communities
8.	Water	Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agriculture uses as

		appropriate.
9.	Power	Provide the resources to re-establish normal power supplies and systems in affected communities
10.	Public Health and Sanitation (Inc. First aid & all Medical care)	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
11.	Animal Health and Welfare	Provision of health and other care to animals affected by a disaster.
12.	Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations.
13.	Logistics	Provide Air, Water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other task forces and competent authorities.
14.	Survey (Damage Assessment)	Collect and analyse on the impact of disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate
15.	Telecommunication	Coordinate and assure operation of all communication systems (e.g; Radio, TV, Telephones, Wireless) required to support early warning or post disaster operations
16.	Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the disaster.

The specific response roles and responsibilities of the taskforces indicated above is that these roles and responsibilities will be executed and coordinated through the ICS/KS system. For example, in Flash Flood, search & rescue would come under the Operations section, Transport would come under the Logistic Section and Public Information under the Public Information Unit.

The Composition of the Taskforces is given in the table below:

Sl.No.	**Task Force**	**Task force Leader**	**Supporting members / Organizations**	**Section / Unit**
1.	Planning and Coordination	DC		Planning
2.	Administration & Protocol	DC		Finance & Admin.
3.	Damage Survey / Assessment	DC		Planning
4.	Warning			Operation
5.	Communications			Logistics
6.	Media	District Info. Officer		Public Information
7.	Logistics			Logistics
8.	Law & Order	SP	Dy. Sp, Home Guards Commandant, NGO's,	Law & Order

			Para military and Armed Forces	
9.	Search & Rescue	Director, Fire & Emergency Services		Operation
10.	Public Works	Exe. Engineer PWD (State)		Operation
11.	Shelter			Operation
12.	Water Supply			Operation
13.	Food & Relief Supplies			Logistics
14.	Power			Operation
15.	Public Health & Sanitation			Operation
16.	Animal Health & Welfare			Operation

V. Planning Section

Responsible for collecting and analyzing information and developing plans to address the objectives set to address the incident. The overall work of the planning section will include efforts undertaken by any planning and coordination taskforce which is established as part of the response to a disaster. Units under the section includes:

1. Assessment and Planning
2. Resources and Requirements
3. Management Information System
4. Documentation
5. Demobilization and
6. Technical Specialists

VI. Logistics Section

Responsible for all task and functions related to provision of material and other resources needed for operations and the physical and material support and operation of the incident management team. This section includes transportation taskforce established to support disaster operations. Logistics tasks are through the following units.

1. Storage and Supply
2. Facilities & Staff Support
3. Communications
4. Transportation (Include Ground, Air Water)

VII. Finance Administration

Responsible for managing all financial and administrative tasks related to incident field operations. These tasks may, but would not usually include disbursement of financial aid to those affected by an incident. The tasks of this section are accomplished through following units:

1. Human Resources;
2. Procurement; and
3. Accounting and Records.

4.2 Emergency Operation Centres/Control Rooms

District Control Room (DCR : District Commissioner or any person nominated)

The District Control Room is located at District Commissioners Office. It is also the central point of information gathering, processing and decision making more specifically to combat the disaster. Most of the strategies decisions are taken in this control room with regard to the management of disaster based on the information gathered and processed. The Incident Commander takes charges at the District Control Room and commands the emergency operations as per the Incident Command System organizational chart.

4.3 Facilities at District Control Room

The District Control Room shall be equipped with but not limited to the following items:

a. Two Telephones
b. One telephone line exclusive Fax / Internet
c. Two Datacard for wireless internet access from two different ISP
d. One 42" LED/LCD Television with local and news channel activation
e. Handheld Radios and Base Stations
f. Satellite Telephone
g. One Laptop mobility purpose (e-mail, Internet and web updation)
h. One Desktop PC with 6 hours UPS for emails, Internet
i. One Laser Printer with one additional toner cartridge to be as part of emergency consumable.
j. One pack of A4 size paper for printing (500 papers of one pack)
k. 20 file covers, 50 Notepads of 25 sheets each, 50 ball point pens
l. Data collection formats
m. Digital Camera to Record and Photograph the incident
n. Marker board – 2 Nos. with adequate markers (three color of 3 units each)
o. Minute to minute incident register
p. Minute to minute command register
q. Conference table with Chairs (16), foldable 10 working tables and twenty Chairs
r. PA system & hand held Microphone
s. A copy of Disaster Management Plan
t. Taluk & District Map
u. Major Accident Hazardous units Maps
v. Drawings showing safe assembly points
w. List of Expert resources hazard specific (Names, Contact, Expertise area)
x. List of Trained Emergency Voluntaries
y. Other relevant documents, if any

All the task force function shall activate & operate their respective control rooms in their office manned by a competent person who is proficient in communication and technically capable of coordinating with Taluk Level Control Room and District Control Room and mobilize requisite resources to the District site.

4.4 Facilities at Task Force Operation rooms (TFOR)

The following facilities are maintained inside TFOR:

- Telephones, Fax, Satellite Phone (no immediately) – it is desirable.
- Hand held Radios/Base Stations
- Marker board (1)
- A copy each of Disaster Management Plan and Task Force Plan
- Other relevant documents, if any

4.5 Taluk level Control Room (TLCR : Respective Taluk Liaison Officer)

The following facilities are maintained in TFCR include ;

- Telephone, Fax
- Life Jackets, Life Rings, Ropes, Generator
- Hand Held Radios/ Base Stations
- Marker board (1)
- A copy each of Disaster Management Plan and Task Force Plan
- Other relevant documents, if any

The above responsible Departments / Personnel shall carryout periodic inspection of such facilities in their respective control rooms at the frequency set by them and maintain records on the same.

SECTION – 5

5.1 TRAINING AND REHEARSALS:

(A) Training and Rehearsal :-

For effective implementation of Disaster management Plan and to achieve above stated objectives, different Kind of training programmes were conducted. Disaster Management Programme has Community based disaster Preparedness approach is being adopted for community level Awareness about Hazards and to create Disaster management Teams at Village Level. All Formed teams were imparted subject Related Trainings. This will further enhance better understanding of individual's role and responsibilities in emergency response besides improving the overall coordinated efforts.

The main objectives of training plan are:

- Familiarizing key personnel involved in the plan with their equipment, the overall plans and their roles.
- Ensuring efficacy of emergency response mechanisms / resources.
- Reviewing the total plan, including communications and logistics, so that updating, modifying and training activities can be improved.

(B) Team Drills

These rehearsals are conducted at regular intervals at least once in a year by individual task force team in order to improve the resource planning, coordination and application of resources. The responsibility of conducting such drills at specified frequency lies with the respective Task Force Leader.

(C) Full-Scale Mock Drills

The ability of the emergency management team to perform a set of critical tasks under simulated conditions for different hazards are validated by conducting a full scale mock drill once in a year. This includes but not limited to management initiatives, response activities, direction, control, mobilization of resources, communications, mitigation and post incident activities of all concerned. This is a field mock drill on a large scale involving all the task forces.

After completion of every team drills and/or Full Scale mock drills, a debriefing meeting shall be arranged in which proceedings of the mock drills are discussed highlighting weak areas-shortfalls for effecting improvement in the plan.

To achieve above stated objectives Mock drills are conducted at MHA site in 2009 & 2012 at Indian Oil Corporation Petroleum & Diesel Storage Unit, Devanagunthi Village, Hoskote (TQ), in assistance with National Disaster Management Authority, New Delhi.

The Bengaluru rural district for the year 2012 – 2013 was decalred as a drought affected district due to very poor rainfall it had received. The district is prone for unpredictable weather conditions, inching towards another severe summer which may contribute to severe Drought, Extreme Heat and Wildfires. These conditions take away the left over green and water reserves meant for people, animals and livestocks. The following module is prepared as a Self Study Material for people in the administration and for the communities to understand and prepare themselves during this current Drought & Extreme Heat conditions and during Wildfires which is a general outcome during such drought conditions.

This training material will guide and assist all the stake holders;

5.2 Drought and Extreme Heat

A drought occurs when there is no substantial rainfall for a long period of time. Since different areas of the country receive widely differing amounts of rainfall, the amount of time it takes for drought conditions to develop varies.

Extreme heat is defined as temperatures 10 degrees or more above the average high temperature, lasting for several weeks. Throughout the country, extreme heat conditions vary. When drought and extreme heat occur at the same time, the conditions can be very dangerous.

Local community officials will alert you through your local newspaper, radio station, or television station when drought and extreme heat conditions exist in your area. Although extreme heat conditions are easily recognized, drought conditions often develop slowly and can only be tracked through local weather advisories.

Mitigation The following guidelines will help communities to mitigate the effects of a drought or extreme heat hazard.

- Practice of personal water conservation measures to avoid depletion of water supplies both before and during periods of extended drought. For farmers, consider establishing alternative sources and supplies of water for crops and domestic animals.

- Conserve electricity. During periods of heat and drought, people use a lot of power for water pumps, fans, coolers, and air condition etc. Excessive drain on the community's energy supply could lead to another emergency, such as a power shortage or outage.

- For large animals, consider creating artificial shade and install coolers specially when they are yielding, and carrying.

Preparedness All family members should learn to recognize heat impairment symptoms and administer appropriate first aid for animals. Causes of heat stroke or hyperthermia in pets are:

- Being left in concealed areas, less air circulation areas, parked cars (the most common reason), Lack of appropriate shelter for an animal outdoors.
- Animals not acclimated to the heat, and

- Excessive exercise in hot and humid weather.
- Never leave your pets on roof tops without shades, in a parked car in the heat of the summer. Even with the window open, pets can quickly suffer heat stroke and die.

Response The signs of heat stress in animals are identified below.

- Excessive panting or difficulty breathing,
- Body temperature 104 F or above,
- Collapse,
- Increased heart and respiratory rate,
- Salivation, and
- Depression, stupor.

In addition to recognizing the signs of heat stress in animals, follow these guidelines when responding during periods of drought and extreme heat.

- Keep animals in areas where they have access to shade.

- Provide animals with plenty of water. Hosing off an animal periodically will also help to cool it.

- Do not exercise animals when it is especially hot outside, e.g. playing or making them run. If you have to work with animals, provide regular rest periods. This allows the body's natural cooling system to work. A few minutes of sweat-free rest every hour will help restore physical and mental energy.

- Animals often are willing to please their owners to the point of endangering themselves.

- Since dogs don't sweat, dogs must be allowed to pant to dissipate heat. Do not encourage them to carry objects in their mouths if they are hot.

- Do not dress animals any clothing type materials that would prevent them from sweating.

- Animals in cages require special attention because the ventilation may not be very good. Provide caged animals with extra ventilation.

- Provide plenty of fresh cool water for all animals to drink. Offer it in a shady place as some species may not venture into the sun if it is very hot.

- Be sure to provide salt licks for animals that require them regularly.

Recovery A prolonged drought can have a serious economic impact on a community. Agricultural production can be severely reduced by loss of crops or livestock, resulting in food shortages. Increased demand for water and electricity can result in shortages of these resources. When combined with extreme heat, droughts can make life very difficult,

especially if the situation lasts for a long time. Droughts are probably the largest cause of death in livestock throughout the world.

Follow these guidelines when recovering from extreme heat or drought conditions.

1. Continue to conserve water even after the drought appears to have ended.

2. If you own a farm and your crop is lost, contact your District Commissioner for disaster assistance information.

3. Avoid any activities that could precipitate fires. As the forest dries up, debris falls on the forest floor. Trees become prone to fire, even from the slightest spark.

5.3 Animals in Wildfires

A wildfire is any instance of uncontrolled burning in grazing lands, or woodlands. Wildfires destroy property and valuable natural resources, and may threaten the lives of people and animals.

Wildfires pose an increasing threat to the farmers. Every year in summer, 100's of hectares of vegetation and grass land in forest get destroyed by self ignition of fire due to excess heat. By September, several 100's of fires would have claimed Flora, Fauna and adjoining farm lands. The source of food for domestic animals and animals in the forest are destroyed.

The increase in fires and population growth in rural and urban communities settling near the forest lands have become a serious concern when adequate preparedness is not practiced.

Wildfires can occur at any time of the year, but usually occur during hot, dry weather. Wildfires are usually signaled by dense smoke which may fill the air for miles around. The forest department is working towards development of efficient systems and adequate infrastructure for issuing wildfire probability forecasts, warning system and response systems. Improvement in communication, forecast, preparedness, warning, training and adequate equipment to manage wildfires is on implementation.

Mitigation There are many actions you can take to mitigate the effects of wildfires. Many of these are listed to follow.

- Use only fire-resistant materials on the exterior of your home or barn, including the roof, siding, decking, and trim.

- Consider installing sprinkler systems for buildings on your property, and lawn sprinkler systems outdoors.

- When constructing pools and ponds, make them accessible to fire equipment — they may serve as a source of water for fighting wildfires.

- Have hoses that are long enough to reach all parts of your building.

- Use fire carefully and wisely so that you do not cause a wildfire. Teach village communities and administration safe practices.

- Avoid open burning during dry weather. Store firewood away from your home and livestock sheds.

- Store hay, sawdust, or straw in a place separate from where animals are housed. This is especially important during the summer when freshly cured hay can suddenly ignite from spontaneous combustion.

- Be extremely careful with open flame when shoeing bulls or any welding activity.

- Gas, pesticides, urea, fertilizers and other hazardous materials should be stored in separate place from animals.

- To reduce the risk of structural fires, make sure that the wiring in your animal shed is in good condition.

- Rodents can chew through the wiring, putting the animal shed at risk for fire. Keep all areas around your animal shed free of cobwebs.

- Clear leaves and other vegetation off roof surfaces and out of gutters regularly. Conduct cleaning activity once in week by removing or brushing from all structures.

- Implement and enforce no smoking policies on your property.

- Teach all personnel working with animals where the fire extinguishers are and how to use them.

- Conduct a fire drill every month throughout the fire season, involve vulnerable communities and responsible administration.

Preparedness The following list outlines steps that you can take to prepare for wildfires.

- Prepare to learn to recognize dangerous fire conditions and how they should consult with local fire department to improve the safety of their houses and animal sheds.

- Prepare to understand the importance of spacing required between house, animal sheds, fire wood, dry fodder and trees prone for catching fire. Cut back vegetation overhanging any houses in Villages.

- Clear vegetation, including dead grass, from around your house or animal sheds to serve as a fire break.

- Fire breaks should be at least 30 feet wide for all structures and 75 feet wide for homes built near Eucalyptus plants (Nilgiri plants).

- Use fire-resistant plants on your property. Check with local fire officials or a nursery about the best species for your area.

- Provide training to communities to plan several evacuation routes with animals in case of fires block the escape. If you have livestock, make arrangements ahead of time for a place to temporarily relocate them. Playgrounds, open fields, large shelters, should be identified and brought to the notice.

- Make sure your trailer is in good condition and keep the gas tank of your car and truck filled. If you do not have enough trailers, identify who else could help you evacuate. Practice your buddy system, teach your livestock how to load into a trailer, and practice your evacuation routes.

- Purchase rope for livestock because nylon ropes can melt when they heat up in a fire. This may lead to deep burn wounds on the animal.

- Have fire tools handy at your home and in your animal sheds a ladder, garden hoses, fire extinguishers, gas-operated water pumps, shovels, rakes, and buckets.

- Keep your livestock tetanus vaccinations current.

Response Use the following list to guide your actions when responding to a wildfire.

- Place a sprinkler on the roofs and anything else that might be damaged by fire to wet down the surfaces. Be sure that your efforts do not jeopardize the water supply and pressure needed by firefighters.

- If officials evacuate your area, leave immediately. Fires can spread rapidly and unpredictably. If you have large numbers of animals, or livestock, it will take a much longer time to evacuate these animals. If you are evacuating donkeys, mules, and horses when the fire is close, it may help to temporarily place a blindfold over their eyes. Place pieces of cloth around there nostrils to reduce the inhalation of smoke. Wet their tails and manes and remove blankets on their backs.

- If you are unable to take animals with you, do not leave them confined. If you have horses and livestock, let them out of the animal shed and close all the doors. A horse may run back into a burning shed if it gets frightened. Turn off the power and gas and disconnect any electrical fences so that animals will not injure themselves trying to escape. (These recommendations are for livestock, poultry and other types of animals; house pets should be leashed/crated and taken with you.)

- If you are on an outing in the forest area and a fire breaks out, note the weather conditions and wind direction. Determine the direction of the fire and plan your escape routes in other directions. If you had a campfire burning, be sure to extinguish it before leaving. As you leave the area, be cautious of wild animals crossing the road.

Recovery The following list provides suggested actions during the recovery phase of a wildfire emergency.

- Consult with your insurance agent and have damages assessed as soon as possible. Take pictures or a video of damages.

- Wildfires can leave scorched and barren land, reducing grazing land for livestock. This land may take many years or decades to return to its previous condition. Major fires can destroy ground cover, which leads to erosion.

- The most common cause of death in fires and in the days afterward are complications from smoke inhalation. All animals exposed to fire should be monitored for smoke inhalation pneumonia. A veterinarian should be consulted immediately for any burn injuries. Burn injuries can be difficult and expensive to treat. They often require intensive care.

- Care must be taken in re-entering burned areas. There may be hot spots that could flare up without warning. Partially burned structures and trees can be very unstable, and may suddenly fall over. Do not tie animals to burned trees. Don't allow animals into areas where there may be ash pits (root systems that have burned underground).

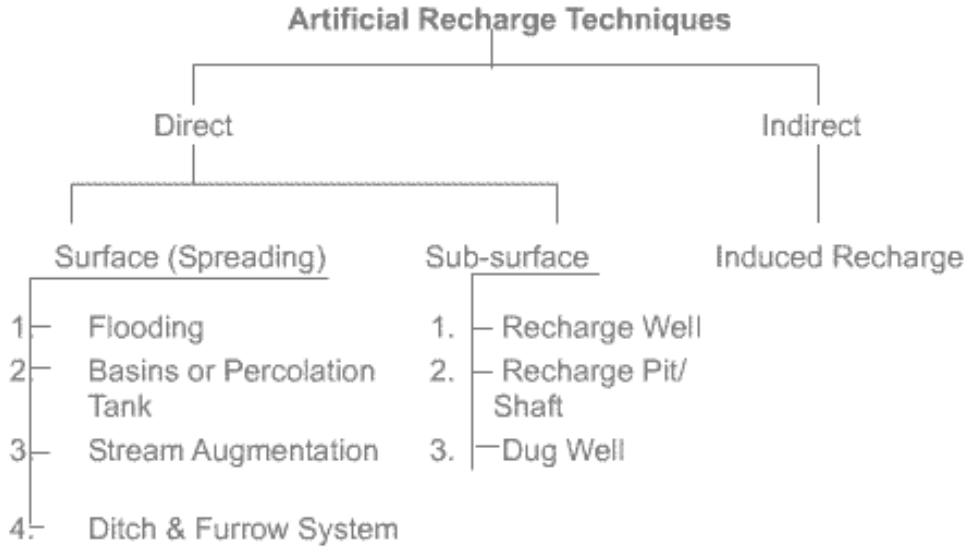
- Check any areas where animals and people will be for dangerous debris — use a metal detector. Consult medical personnel about tetanus vaccinations for your family and animals.

- Debris from burned buildings should be removed before animals re-enter the area. Metal pipes heated during a fire may be coated with toxic residues from the heat damaged galvanized components. If this occurs to your pasture fences, they need to be cleaned before any animals come in contact with them.

- Replant burned forests quickly and efficiently to reduce the soil erosion. Ask your taluq / district administration for guidelines.

5.4 Techniques of Artificial Recharge of Ground Water

Artificial recharge is the process by which the ground water is augmented at a rate much higher than those under natural condition of replenishment.The techniques of artificial recharge can be broadly categorized as follows.



A. SURFACE (SPREADING) METHODS

These methods are suitable where large area of basin is available and aquifers are unconfined without impervious layer above it. The rate of infiltration depend on nature of top soil if soil is sandy the infiltration will be higher then those of silty soil. The presence of solid suspension in water used for recharge clogs the soil pores leading to reduction in infiltration rate i.e. recharge rate. Water quality also affects the rate of infiltration. The various spreading methods are as below:-

1. Flooding

This method is suitable for relatively flat topography. The water is spread as a thin sheet. It requires a system of distribution channel for the supply of water for flooding. Higher rate of vertical infiltration is obtained on areas with undisturbed vegetation and sandy soil covering.

2. Basin & Percolation Tanks

This is the most common method for artificial recharge. In this method, water is impounded in series of basins or percolation tank. The size of basin may depend upon the topography of area, in flatter area will have large basin. The most effective depth of water in basin is 1.25 m (Baumani New York) because lesser or greater depths resulted in reduced rate of infiltration. This method is applicable in alluvial area as well as hard rock formation. The efficiency and feasibility of this method is more in hard rock formation where the rocks are highly fractured and weathered.

3. Stream Augmentation

Seepage from natural streams or rivers is one of the most important source of recharge of the ground water reservoir. When total water supply available in a stream / river exceeds the rate of infiltration, the excess is lost as run off. This run off can be arrested through check bunds or widening the steam beds thus larger area is available to spread the river water increasing the infiltration. The site selected for check dam should have sufficient thickness of permeable bed or weathered formation to facilitate recharge of stored water within short span of time. The water stored in these structures is mostly confined to stream course and height is normally less than 2 m. To harness maximum run off, a series of such check dam may be constructed.

4. Ditch & Furrow system

In areas with irregular topography ditches or furrow provide maximum water contact area for recharge. This technique consists of a system of shallow flat bottomed and closely spaced ditches / furrow which are used to carry water from source like stream /canals and provide more percolation opportunity. This technique required less soil preparation and is less sensitive to silting. Generally three pattern of Ditch & furrow system are adopted (i) lateral (ii) dendritic & (iii) contour. In area of low-transmissibility the density of ditch & furrow will be high.

B. SUB-SURFACE METHOD

In this method the structure lies below the surface and recharges ground water directly. The important structures commonly use are Recharge wells, Recharge shaft, Dug wells etc.

1. Recharge Well

Recharge wells can be of two types - (a) Injection well, where water is “pumped in” for recharge and (b) Recharge well, where water flows under gravity.

The Injection wells are similar to a tube well. This technique is suitable for augmenting the ground water storage of deeper aquifers by “pumping in” treated surface water. These wells can be used as pumping wells during summers. The method is suitable to recharge single aquifer or multiple aquifers. The recharge through this technique is comparatively costlier and required specialized technique of tube well construction and maintenance to protect well from clogging. It is better if an abandoned tube well is used as a recharge well which will be a cost-effective structure.

The recharge well for shallow water table aquifers up to 50 m are cost effective because recharge can take place under gravity flow only. These wells could be of two types, one is dry and another is wet. The dry types of wells have bottom of screen above the water table. In such wells excessive clogging is reported due to release of dissolved gasses as water leaves the well and on other hand redevelopment methods have not been found effective in dry type of wells. The wet type of wells are the wells in which screen is kept below water table. These wet type wells have been found more successful.

2. Pits & Shafts

In area where impervious layer is encountered at shallow depth the pits & shafts are suitable structure for artificial recharge. These structures are cost effective to recharge the aquifer directly. The diameter of shaft should normally be more than 2 m to accommodate more water. A silt free source water can be put into recharge shaft / pit directly through pipes, if this pipe is kept above water table there are chances of choking of the aquifer by air bubble with water therefore it is always advisable to lower the injection pipe below the water level.

On other hand in the areas where source water is having silt the shaft / pit should be filled with boulder, coarse sand from bottom to have inverted filter or the source water should be passed through a separate filter chamber before it enters the shaft / pit.

The advantage of shafts / pits structure is that they do not require large piece of land like percolation tank & other spreading method and there are practically no losses of water in form of soil moisture and evaporation like other methods of spreading.

3. Dug wells

In alluvial as well as hard rock areas there are thousand of dug wells have either gone dry due to considerable decline of water levels. These dug wells can be used as recharge structure storm water and other surplus water from canal etc. can be diverted into these structures to directly recharge the dried aquifer. The water for recharge should be guided through a pipe to the bottom of well to avoid entrapment of bubbles in the aquifer. The source water should be silt free.

C. INDUCED RECHARGE

It is an indirect method of artificial recharge involving pumping from aquifer hydraulically connected with surface water such as perennial streams, unlined canal or lakes. The heavy pumping lowers the ground water level and cone of depression is created. Lowering of water levels induces the surface water to replenish the ground water. This method is effective where steam bed is connected to aquifer by sandy formation.

Basic Requirement for Artificial Recharge

The basic requirement for recharging ground water is Source water availability. The availability of source water is basically assessed in terms of non-committed surplus monsoon run off. This component can be assessed by analysing the following:

a. Monsoon Rainfall
b. Its frequency
c. Number of rainy days
d. Maximum Rainfall in a day
e. Its variation n space & time

Broadly, to calculate monsoon surplus, the 50% of monsoon rainfall (i.e., July, August and September) can be considered as monsoon run-off

RAIN WATER HARVESTING

The rain water in urban area can be conserved through Roof Top Rain Water Harvesting Techniques for artificial recharge to ground water. This technique requires connecting the outlet/drop pipe from roof of the building to divert the rainwater to either existing wells/ tube wells / bore well or specially designed structure.

The advantages of Rain Water Harvesting are:

1. Rainwater is bacteriologically pure, free from organic matter and soft in nature.
2. It will help in reducing the flood hazard
3. To improve the quality of existing ground water through dilution
4. Rainwater may be harnessed at place of need and may be utilised at time of need.
5. The structures required for harvesting the rainwater are simple, economical and eco-friendly

ROOF TOP RAIN WATER HARVESTING

The rapid pace of growth of population and consequent urbanisation has led to stress on available water resources due to over use of surface supplies and over-exploitation of ground water. Dependence on ground water, to meet various requirements, is so heavy that water levels are declining rapidly and the dug wells and bore wells are even drying up. On the other hand, in urban settlements, the natural recharge to ground water has diminished considerably due to shrinkage of open land consequent to urbanisation activities. Therefore, in the present day scenario there is utmost need to augment ground water storage by arresting the roof top rain-water which drains off in to the sewerage of urban settlement.

1. WHAT IS ROOF TOP HARVESTING

In Urban areas, the roof top rainwater can be conserved and used for recharge of ground water. This approach requires connecting the outlet/drop pipe from roof of the building to divert the rainwater to either existing wells/tubewells/bore well or specially designed structure.

2. WHY IT IS REQUIRED

a. To meet ever increasing demand for water in urban area.
b. To reduce the runoff, which is choking the storm drains
c. To avoid the flooding of roads.
d. To augment the ground water
e. To reduce the ground water pollution.
f. To improve the quality of ground water.
g. To reduce the soil erosion.

3. WHAT ARE THE ADVANTAGES

1. This is an ideal solution of water problems where there is inadequate ground water supply or surface resources are either lacking or insignificant.
2. To utilise the rainfall runoff, which is going to sewer or storm drains.
3. Rainwater is bacteriologically pure, free from organic matter and soft in nature.
4. It will help in reducing the flood hazard.
5. To improve the quality of existing ground water through dilution.

6. To remove bacteriological and other impurities from sewage and waste water so that the water is suitable for re-use.
7. Rainwater may be harnessed at place of need and may be utilised at time of need.
8. The structures required for harvesting the rainwater are simple, economical and eco-friendly

4. HOW TO DO IT

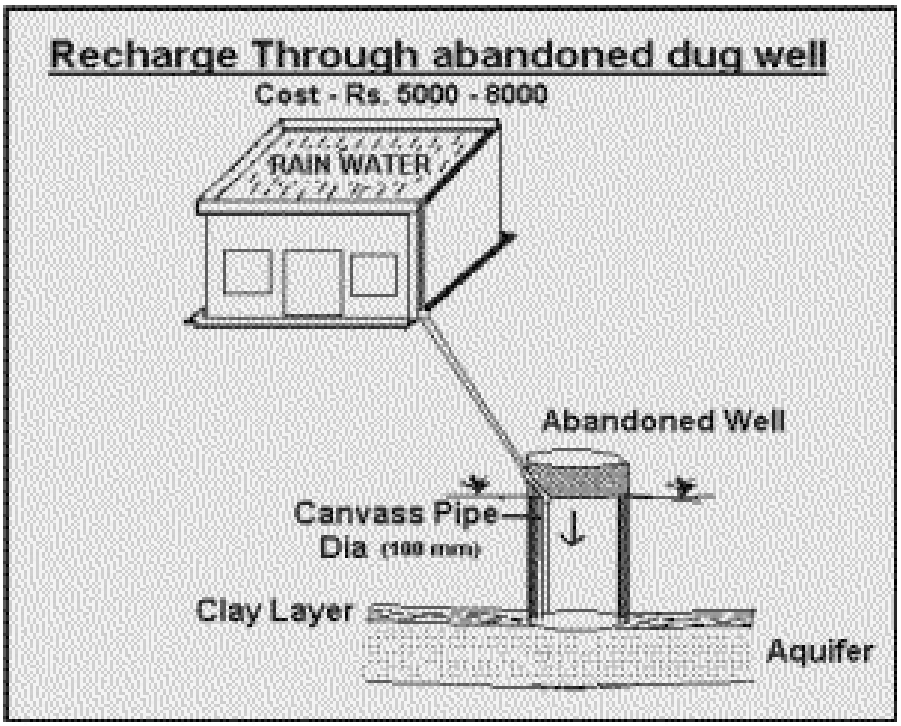
Roof top rainwater is recharge of ground water reservoir through

1. Abandoned dug well.
2. Abandoned/running hand pump.
3. Recharge pit. Recharge trench.
4. Gravity head recharge well. Recharge shaft

5. DESIGN GUIDELINES

- A dry/unused dug well can be used as a recharge structure.
- The recharge water is guided through a pipe to the bottom of well or below the water level to avoid scouring of bottom and entrapment of air bubbles in the aquifer.
- Before using the dug well as recharge structure, its bottom should be cleaned and all the fine deposits should be removed.
- Recharge water should be silt free.
- It should be cleaned regularly.
- It is suitable for large building having the roof area more than 1000 sq.m.
- Periodic chlorination of water should be done for controlling the bacteriological contamination.

ABANDONED DUG WELL



5.5 Proposed Training Calendar of Bengaluru Rural District for 2015-2016

Sl.No.	Program Name	No. of programs	Rate/program	Total cost
1	Incident Response System: Basics			
2	Fire Emergency Program			
3	School Safety for Teachers			
4	Awarness Program on Spurious Spirits			
5	School Safety for School Management			
6	School Safety for Disaster Education Officers			
7	Disaster Preparedness for people with Disabilities in Vulnerable areas			
8	Formulation of District Disaster Management Plan: Plan and Process			
9	Programme on Emergency Operation Centres (EOCs)			
10	Road Accidents & its Safety			
11	Legal Framework for Disaster Management			
12	Gender Sensitive Disaster Management			
13	Health Care for all in Emergencies			
14	Chemical (Industrial) Disaster Management			
15	IRS: Operations Section Chief Course			
16	Post Disaster Damage & Needs Assessment and Recovery Framework			
17	Livestock & other Animals during Fire			
18	Prog. on DM for NCC and NSS officers			
19	Drought and Extreme Heat Management			
20	Needs for Children in Disasters			
21	Planning & Rejuvenation of Water Bodies			
22	Formulation of Village DM Plan			
23	Flash Flood Disaster Management			
24	Climate Change & Drought Risk Management			
25	Course on IRS			
26	Mainstreaming DRR in Environment Sector (Eco System Approach to Disaster Risk Reduction)			
27	Integrated Drought Risk Mitigation Management			
28	Landslide Hazard and Risk Management			
29	Disaster Psycho-social Care			
30	IRS – Pre planning			
31	Building Codes and Design for Disaster Safe Built Environment			
32	Civil Defence and Disaster Management			
33	Impact of Extreme Weather Events (Heat and Cold Wave)			
34	Urban Risk Mitigation & Management			

35	Relief Management during Disasters			
36	Stampede Risk Reduction for Religious Places			
37	Forest Fire Risk Mitigation & Management			
38	Disaster Database Management			
39	IRS: Planning Section Chief Course			
40	Mainstreaming DRR into Development for Rural Sector			
41	Role of Forestry Sector in Disaster Management			
42	Community Based Disaster Risk Reduction in India			
43	Earthquake Risk Mitigation and Management			
44	Stress Management in Disasters: A caregiver's Module			
45	Cultural Heritage Risk Management			
46	Potential Risk and Vulnerability factors and Developing of SOPs Railways			
47	Chemical, Biological, Radiological and Nuclear Emergencies			
48	Seismic Micro-zonation and risk mapping			
49	Post Disaster Damage & Needs Assessment			
50	Basic Course on Role of Police in Disaster Management			
51	Water & Sanitation in Disaster Management			
52	Comprehensive Disaster Management Course for Teachers			
53	Spatial Planning for Chemical Disaster Management			
54	Urban Risk Management			
55	Gender & Disaster Management			
56	Formulation of Village Disaster Management Plan			
57	Community Based Disaster Risk Reduction in and around Devanagunthy, Hoskote Tq			

The above listed training programs are One/Two Day Programs. The programs may be conducted at various levels of district administration along with the involvement of stake holders and community. The scope of the above listed programs cover the national and state level priorities, policy information, operational, functional and implementation knowledge skills. Also provides understanding the state objectives and goals to work in coordination during any disaster situation.

SECTION – 6

Role of Each Department for Preparedness and Mitigations:

Each Department and Govt. agency involved in Disaster Management and Mitigation will:

- Designate a Nodal officer for emergency response and will act as the contact person for that department/agency.
- Ensure establishment of fail-safe two-way communication with the state, district and other emergency control rooms and within the organization.
- Emphasis on communication systems used regularly during LO with more focus on the use of VHFs with automatic repeaters, mobile phones with publicized numbers. HF radio sets etc. It should be remembered that SAT phones fail during prolonged emergencies and electric failure if the phones cannot be re-charged.
- Work under the overall supervision of the IC / the District Commissioner during emergencies.

6.1 Agriculture

Prevention Activities:

- Awareness generation regarding various plant disease, alternate cropping practices in disaster-prone areas, Crop Insurance, provision of credit facilities, proper storage of seeds, etc.
- Hazard area mapping (identification of areas endemic to pest infections, drought, flood, and other hazards).
- Develop database village-wise, crop-wise, irrigation source wise, insurance details, credit facilities, etc.
- Regular monitoring at block level; the distribution and variation in rainfall. Prepare the farmers and department officers to adopt contingency measures and take up appropriate course of action corresponding to the different emerging conditions.
- Detail response manuals to be drawn up for advising the farmers for different types of disasters, e.g., rain failure and development of a dynamic response plan taking into account weekly rainfall patterns.
- Develop materials to advise the farming communities on cropping practices and precautionary measures to be undertaken during various disasters.
- Improving irrigation facilities, watershed management, soil conservation and other soil, water and fertility management
- Measures keeping in mind the local agro climatic condition and the proneness of the area to specific hazards.
- Promotion of alternative crop species and cropping patterns keeping in mind the vulnerability of areas to specific hazards.
- Surveillance for pests and crop disease and encourage early reporting.

- Encourage promotion of agro service outlets / enterprise for common facilities, seed and agro input store and crop insurance

Preparedness Activities before disaster seasons

- Review and update precautionary measures and procedures and especially ascertain that adequate stock of seeds and other agro inputs are available in areas prone to natural calamities.
- Review the proper functioning of rain gauge stations, have stock for immediate replacement of broken / non functioning gadgets/equipments, record on a daily basis rainfall and match it with the rainfall needs of existing crops to ensure early prediction of droughts.

Response activities:

- Management of control activities following crop damage, pest infestation and crop disease to minimize losses.
- Collection, laboratory testing and analysis of viruses to ensure their control and eradication.
- Pre-positioning of seeds and other agro inputs in strategic points so that stocks are readily available to replace damage caused by natural calamities.
- Rapid assessment of the extent of damage to soil, crop, plantation, irrigation systems, drainage, embankment, other water bodies and storage facilities and the requirements to salvage, re-plant, or to compensate and report the same for ensuring early supply of seeds and other agro inputs necessary for re-initiating agricultural activities where crops have been damaged.
- Establishment of public information centres with appropriate and modern means of communication, to assist farmers in providing information regarding insurance, compensation, repair of agro equipments and restarting of agricultural activities at the earliest.

Recovery Activities

- Arrange for early payment of compensation and crop insurance dues.
- Facilitate provision of seeds and other agro inputs.
- Promotion of drought and flood tolerant seed varieties.
- Review with the community, the identified vulnerabilities and risks for crops, specific species, areas , which are vulnerable to repetitive floods, droughts, other natural hazards, water logging, increase in salinity, pest attacks etc. and draw up alternative cropping plans to minimise impacts to various risks.
- Facilitate sanctioning of soft loans for farm implements.
- Establishment of a larger network of soil and water testing laboratories.
- Establishment of pests and disease monitoring systems.
- Training in alternative cropping techniques, mixed cropping and other agricultural practices which will minimise crop losses during future disasters.

6.2 Health Department : Disaster Events

Prevention Activities:

- Assess preparedness levels at State, District and Block levels.
- Identification of areas endemic to epidemics and natural disasters.
- Identification of appropriate locations for testing laboratories.
- Listing and networking with private health facilities.
- Developing a network with private health facilities.
- Strengthening of disease surveillance, ensuring regular reporting from the field level workers and its compilation and analysis at the CHC and PHC levels, on a weekly basis (daily basis in case of an epidemic or during natural disasters), forwarding the same to the State Disease Surveillance Cell and monthly feed back from the State to the district and from the District to the PHC.
- Formation of adequate number of mobile units with trained personnel, testing facilities, communication systems and emergency treatment facilities.
- Identification of locations in probable disaster sites for emergency operation camps.
- Awareness generation about various infectious diseases and their prevention.
- Training activities.
- Training of field personnel, Traditional Birth Attendants, community leaders, volunteers, NGOs and Health Centers in first aid, measures to be taken to control outbreak of epidemics during and after a disaster, etc.
- Arrangements of standby generations for every hospitals.
- Listing of vehicles, repair of departmental vehicles that will be requisitioned during emergencies for transport of injured.

Preparedness Activities before Disaster Seasons

- Preparation and distribution of materials, distribution of preventive and other life saving drugs, training of field personnel on measures to be taken for management of patients suspected to be suffering from outbreaks;
- For flood : Assessment and stock pilling of essential medicines, anti snake venom, halogen tablets, bleaching powders. ORS tablets, Pre-positioning of mobile units at vulnerable and strategic points.

Response activities:

- Stock piling of life-saving drugs, detoxicants, anesthesia, Halogen tablets in vulnerable areas.
- Strengthening of drug supply system with powers for local purchase.
- Situational assessment and reviewing the status of response mechanisms in known vulnerable pockets.
- Ensure adequate availability of personnel in disaster sites.
- Review and update precautionary measures and procedures, and apprise the personnel who will be implementing those.

Sanitation

- Dispensing with post-mortem activities during L1, L2, and L3 when the relatives and/or the competent authority is satisfied about cause of death.
- Disinfections for water bodies and drinking water sources.
- Immunization against infectious diseases.
- Ensure continuous flow of information

Recovery Activities

- Continuation of disease surveillance and monitoring.
- Continuation of treatment, monitoring and other epidemic control activities till the situation is brought under control and the epidemic eradicated.
- Trauma Counseling.
- Treatment and socio-medical rehabilitation of injured or disabled persons.
- Immunisation and nutritional surveillance.
- Long term plans to progressively reduce various factors that contribute to high level of vulnerability to diseases of population affected by disasters

6.2.1 Epidemics

2013 Outbreaks (reported in NCDC News letter Volume 3, Issue 1, January-March 2014).

A total of 1964 disease outbreaks were reported to and responded by the states/districts through Integrated Disease Surveillance Programme (IDSP) during 2013. As shown in the table below, Maharashtra (256, 13%), Karnataka (251, 12.8%) and West Bengal (232, 11.8%) reported the maximum number of outbreaks during this period. Acute diarrhoeal disease (576, 29.3%), food poisoning (370, 18.8%), viral fever/pyrexia of unknown origin (PUO) (272, 13.8%) and dengue (130, 6.6%) were the most common disease conditions causing outbreaks in 2013. Laboratory facilities were accessed in 63% of the outbreaks reported under IDSP by the states/Union Territories (UTs) in 2013.

To improve the quality of outbreak investigations, states/UTs have been requested to:

1. Prepare complete outbreak investigation reports and share the same with Central Surveillance Unit (CSU) at NCDC for feedback.

2. Send appropriate samples for laboratory investigations.

The CSU assists the states/UTs by critically reviewing and discussing some of the important reported outbreaks through video conferencing and providing feedback.

(Contributed by Drs Jagvir Singh, National Project Officer, IDSP, Pradeep Khasnobis, Chief Medical Officer (Senior Grade), IDSP)

Epidemics : 2013 Survey published by IDSP

State wise no. of outbreaks reported under IDSP 2013		
Sl. No.	State / UTs	Year
		2013
1	Andaman & Nicobar	1
2	Andhra Pradesh	123
3	Arunachal Pradesh	7
4	Assam	70
5	Bihar	134
6	Chandigarh	
7	Chhattisgarh	58
8	Dadra and Nagar Haveli	2
9	Daman & Diu	
10	Delhi	4
11	Goa	8
12	Gujarat	117
13	Haryana	15
14	Himachal Pradesh	5
15	Jammu & Kashmir	54
16	Jharkhand	50
17	Karnataka	251
18	Kerala	76
19	Lakshadweep	
20	Madhya Pradesh	98
21	Maharashtra	256
22	Manipur	4
23	Meghalaya	1
24	Mizoram	1
25	Nagaland	1
26	Odisha	113
27	Puducherry	
28	Punjab	24
29	Rajasthan	33
30	Sikkim	3
31	Tamil Nadu	149
32	Tripura	4
33	Uttar Pradesh	37
34	Uttarakhand	33
35	West Bengal	232
Grand Total		1964

Disease Wise no. of Outbreaks reported under IDSP - 2013		
S.No.	Diseases/Illness	Year
		2013
1	Acute Diarrhoeal Disease	576
2	Acute Encephalitis Syndrome	13
4	Anthrax	10
5	Chickenpox	121
6	Chikungunya	72
7	Cholera	96
8	Crimean-Congo Hemorrhagic Fever (CCHF)	8
9	Dengue	130
10	Diphtheria	4
12	Enteric Fever	1
13	Food Poisoning	370
14	Influenza A H1N1	1
16	Influenza B	1
17	Kala-azar	1
18	Leptospirosis	12
19	Malaria	43
20	Measles	89
22	Mumps	25
23	Pertussis	1
24	Rubella	7
25	Scrub Typhus	4
26	Viral Fever/PUO	272
27	Viral Hepatitis	99
28	Others	8
	Total	1964

Preventive Activities:

- Supply of safe drinking water, water quality monitoring and improved sanitation.
- Vector Control programme as a part of overall community sanitation activities.
- Promotion of personal and community latrines.
- Sanitation of sewage and drainage systems.
- Development of proper solid waste management systems.
- Surveillance and spraying of water bodies for control of malaria.
- Promoting and strengthening Primary Health Centres with network of paraprofessionals to improve the capacity of surveillance and control of epidemics.
- Establishing testing laboratories at appropriate locations to reduce the time taken for early diagnosis and subsequent warning.
- Establishing procedures and methods of coordination with the Health Department, other local authorities/departments and NGOs to ensure that adequate prevention

and preparedness measures have been taken to prevent and / or minimise the probable outbreak of epidemics.

- Identification of areas prone to certain epidemics and assessment of requirements to control and ultimately eradicate the epidemic.
- Identification of appropriate locations and setting up of site operation camps for combating epidemics.
- Listing and identification of vehicles to be requisitioned for transport of injured animals.
- Vaccination of the animals and identifications of campsites in the probable areas.
- Promotion of animal insurance.
- Tagging of animals.
- Arrangement of standby generations for veterinary hospitals.
- Provision in each hospital for receiving large number of livestock at a time.
- Training of community members in carcasses disposal.

Preparedness activities before disaster seasons

- Stock piling of water, fodder and animal feed.
- Pre-arrangements for tie-up with fodder supply units.
- Stock-piling of surgical packets.
- Construction of mounds for safe shelter of animals.
- Identification of various water sources to be used by animals in case of prolonged hot and dry spells.
- Training of volunteers & creation of local units for carcass disposal.
- Municipalities / Gram Panchayats to be given responsibility for removing animals likely to become health hazards.

Response Activities:

- Eradication and control of animal diseases, treatment of injured animals – Protection of abandoned and lost cattle.
- Supply of medicines and fodder to affected areas.
- Ensure adequate availability of personnel and mobile team.
- Disposal of carcasses ensuring proper sanitation to avoid outbreak of epidemics.
- Establishment of public information centre with a means of communication, to assist in providing an organized source of information.
- Mobilizing community participation for carcass disposal.

Recovery Activities:

- Assess losses of animals and needs of persons and communities.
- Play a facilitating role for early approval of soft loans for buying animals and ensuring insurance coverage and disaster proof housing or alternative shelters / mounds for animals for future emergencies.
- Establishment of animal disease surveillance system.

6.2.2 Quarantine Centre at Bengaluru International Airport:

It is important to include international standard quarantine centre in Bengaluru International Airport to screen and prevent suspected passengers travelling or arriving. The seriousness of Epidemics and Communicable disease is well known to all of us. Airports, Ports and Border posts are the most vulnerable links for epidemic transit. The round the clock transit hospital with competent screening methodology and facility to quarantine the infected / suspected traveler is need of the hour.

6.3 Water Supplies and Sanitation Prevention activities :

Prevention Activities

- Provision of safe water to all habitats.
- Identification of Ground water reserves for the purpose of emergency situation and to retain such locations with in the control of District and Taluk administration.
- Clearance of drains and sewerage systems, particularly in the urban areas.
- Environment and industrial pollution control measures to control contamination of Ground water reserves

Preparedness Activities for disaster seasons

- Prior arrangement of water tankers and other means of distribution and storage of water.
- Prior arrangement of stand-by generators**.**
- Adequate prior arrangements to provide water and halogen tablets at identified sites to used as relief camps or in areas with high probability to be affected by natural calamities.
- Raising of tube-well platforms, improvement in sanitation structures and other infrastructural measures to ensure least damages during future disasters.
- Riser pipes to be given to villagers.

Response Activities:

- Disinfections and continuous monitoring of water bodies.
- Ensuring provision of water to hospitals and other vital installations.
- Provision to acquire tankers and establish other temporary means of distributing water on an emergency basis.
- Arrangement and distribution of emergency tool kits for equipments required for dismantling and assembling tube wells, etc.
- Carrying out emergency repairs of damaged water supply systems.
- Disinfection of hand pumps to be done by the communities through prior awareness activities & supply of inputs.

Recovery Activities:

- Strengthening of infrastructure.
- Sharing of experiences and lessons learnt.
- Training to staff, Review and documentation.
- Development of checklists and contingency plans.

6.4 Police:

Prevention Activities:

- Keep the force in general and the KSFES, HG & Police (SDRF will be formed) in particular fighting fit for search, rescue, evacuation and other emergency operations at all times through regular drills.
- Procurement and deployment of modern emergency equipments while modernizing existing infrastructure and equipments for disaster response along with regular training and drills for effective handling of these equipments.
- Focus on better training and equipments for KSFES, HG & Police for all types of disasters, e.g. diving equipments.
- Rotation of members of KSFES, HG & Police so that the force remains fighting fit.
- Ensure that all communication equipments including wireless are regularly functioning and deployment of extra wireless units in vulnerable pockets.
- Ensure inter changeability of VHF communication sets of police and KSDMA supplied units, if required.
- Formation of Karnataka State Disaster Response Force, with adequate training & skills to help during Disasters.
- Keeping close contact with the District Administration & Emergency Officer.
- Superintendent of Police, District Fire Officer and Commandant Home Guard be made the Vice Chairperson, and Members of District Natural Calamity Committee.
- Involvement of the local army units in response planning activities and during the preparation of the annual contingency plans to ensure logistics and other support to armed forces during emergencies.

Response Plan:

- Security arrangements for relief materials in transit and in camps etc.
- Senior police officers to be deployed in control rooms at State & district levels.
- Deploy personnel to guard vulnerable embankments and at other risk points.
- Arrangement for the safety.
- Coordinate search, rescue, and evacuation operations in coordination with the administration
- Emergency traffic management.
- Maintenance of law and order in the affected areas.
- Assist administration in taking necessary action against hoarders, black marketers etc.

6.5 Civil Defence:

Prevention Activities:

- Organise training programmes on First-Aid, Blood donation camps, Search & Rescue, and Evacuation.
- Preparation and implementation of first aid, search and rescue service plans for major public events in the State.
- Remain fit and prepared through regular drills and exercises at all times.
- Encourage more and more citizens in the district to join and actively participate in Civil Defence and to provide adequate support to train them in Disaster Mitigation and Preparedness Skills.

Response Activities:

- Act as Support agency for provision of first aid, search and rescue services to other emergency service agencies and the public.
- Act as support agency for movement of relief.
- Triage of causalities and provision of first aid and treatment.
- Work in Co-ordination with medical assistance team.
- Help the Police for traffic management and law and order.

6.6 Fire Services:

Prevention Activities:

- Development/enforcement of relevant legislations and regulations to enhance adoption of fire safety measures.
- Modernisation of fire-fighting equipments and strengthening infrastructure.
- Identification of pockets, industry, etc. which highly susceptible to fire accidents or areas, events which might lead to fires, building collapse, etc. and educate people to adopt safety measures. Conduct training and drills to ensure higher level of prevention and preparedness.
- Building awareness in use of various fire protection and preventive systems.
- Training the communities to handle fire emergencies more effectively.
- VHF network for fire services linked with revenue & police networks.
- Training of masons & engineers in fireproof techniques.
- Making clearances of building plans by fire services mandatory.

Response Activities:

- Rescue of persons trapped in burning, collapsed or damaged buildings, damaged vehicles, including motor vehicles, trains and aircrafts, industries, boilers and pressure vessels, trenches and tunnels.
- Control of fires and minimizing damages due to explosions.
- Control of dangerous or hazardous situations such as oil, gas and hazardous material spill.
- Protection of property and the environment from fire damage.
- Support to other agencies in the response to emergencies.
- Investigation into the causes of fire and assist in damage assessment.

Fire & Emergency Services, resources available at Bengaluru Rural District : 2013 – 2014					
Sl.No	**Equipment & Resources**	**Hoskote**	**DB Pura**	**Nelamangala**	**Devanahalli**
01.	Fire Water Tenders	02	02	02	Nill
02.	Portable Pumps	02	02	02	Nill
03	Motorbike Water Tender	01	01	01	Nill
04	Life Jackets	10	10	10	Nill
05	Life Buoy	10	10	10	Nill
06	Breathing apparatus sets	02	04	04	Nill
07	Rescue Ropes	12	05	06	Nill
08	Fire racks	02	02	12	Nill
09	Fire hooks	02	04	01	Nill
10	Torches	02	03	03	Nill
11	Fire man axe	01	01	02	Nill
12	Graphnols	02	02	06	Nill
13	First Aid Boxes	01	02	02	Nill

6.7 Civil Supplies:

Preventive Activities

- Construction and maintenance of storage go downs at strategic locations.
- Stock piling of food and essential commodities in anticipation of disaster.
- Take appropriate preservative method to ensure that food and other relief stock are not damaged during storage, especially precautions against moisture, rodents and fungus infestation.

Response Activities

- Management of procurement
- Management of material movement
- Inventory Management

Recovery Activities

- Conversion of stored, unutilized relief stocks automatically into other schemes like food for work. Wherever, it is not done leading to damage of stock, it should be viewed seriously.

6.8 Public Works Department

Prevention Activities :

- Keep a list of earth moving and clearing vehicles / equipments (available with Govt. Departments, PSU's and private contractors, etc.) and formulate a plan to mobilize those at the earliest.
- Inspection and emergency repair of roads / bridges, public utilities and buildings.

Response Activities

- Clearing of roads and establish connectivity. Restore roads, bridges and where necessary make alternate arrangements to open the roads to traffic at the earliest.
- Mobilization of community assistance for clearing blocked roads.
- Facilitate movement of heavy vehicles carrying equipments and materials.
- Identification and notification of alternative routes to strategic locations.
- Filling of ditches, disposal of debris, and cutting of uprooted trees along the road.
- Arrangement of emergency tool kit for every section at the divisional levels for activities like clearance (power saws), debris clearance (fork lifter) and other tools for repair and maintenance of all disaster response equipments.

Recovery Activities:

- Strengthening and restoration of infrastructure with an objective to eliminate the factor(s) which caused the damage.
- Sharing of experiences and lessons learnt.
- Training to staff, Review and documentation.
- Development of checklists and contingency plans.

Resources identified for Disaster Response by Publics Works Department for the year 2015 – 2016

Equipment	Contact No.	Contractor Name & Address	No. of Units
Nelamangala Taluk			
Tractor		M.G.Hanumantha Raju, No.6, Bank Colony, subash Nagar, Nelamangala	2
Tipper			4
ForkLine (JCB)			1
JCB	9448619990	H.Shivkumar, Mahimarang Nilaya, Subhas Nagar, Nelamangala	1
Tipper			3
Tractor			1

Equipment	Contact No.	Contractor Name & Address	No. of Units
Devanahalli Taluk			
Lorry	9845068397	B.Mumikrishnappa, J.C.Badawane, Vijayapur Town, Devanahalli	4
Road Roller			2
JCB			2
Hoskote			
Lorry	9448417979	M.N.Chandrasekaraiah Manchappanahalli, Tavarakere Post, Hoskote	2
Tractor			2
JCB			2
Lorry	9845205899	M.Ganesh, Doddagattiganabbe, Hoskote	4
JCB			2
Tipper			2
Tractor			2
Dodaballapura Taluk			
Road Roller	9845069338	Rehman Shariff, DB Pura	1
Tractor	984457583	Ramesh, Bommanahalli, DB Pura	1
JCB			1
JCB	9880455074	Achalamurthy, DB Pura	1
JCB	9448086373	K.N.Srinivas, Indiranagar, Bengaluru	1
Tipper			1

6.9 Energy:

Prevention Activities:

- Identification of materials/tool kits required for emergency response.
- Ensure and educate the minimum safety standards to be adopted for electrical installation and equipments and organize training of electricians accordingly.
- Develop and administer regulations to ensure safety of electrical accessories and electrical installations.
- Train and have a contingency plan to ensure early electricity supply to essential services during emergencies and restoration of electric supply at an early date.
- Develop and administer code of practice for power line clearance to avoid electrocution due to broken / fallen wires.
- Strengthen high-tension cable towers to withstand high wind speed, flooding and earthquake, modernize electric installation, strengthen electric distribution system to ensure minimum damages during natural calamities.
- Conduct public/industry awareness campaigns to prevent electric accidents during normal times and during and after a natural disaster.

Response Activities:

- Disconnect electricity after receipt of warning.
- Attend sites of electrical accidents and assist in undertaking damage assessment.
- Stand-by arrangements to ensure temporary electricity supply.
- Prior planning & necessary arrangements for tapping private power plants during emergencies to ensure uninterrupted power supply to the Secretariat, Police Headquarters, All India Radio, Doordarshan, hospitals, medical colleges, Control Rooms and other vital emergency response agencies. Inspection and repair of high tension lines/substations/transformers/poles etc.
- Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems.
- Restore electricity to the affected area as quickly as possible.
- Replace / restore of damaged poles/ salvaging of conductors and insulators.

6.10 Water Resource Department

Prevention Activities:

- Assess preparedness level.
- Annual assessment of danger levels & wide publicity of those levels.
- Identify flood prone rivers and areas and activate flood monitoring mechanisms.
- Provide water level gauge at critical points along the rivers, dams and tanks.
- Identify and maintain of materials/tool kits required for emergency response.
- Stock-pile of sand bags and other necessary items for breach closure at the Panchayat level.
- Response Activities:
- Monitoring flood situation
- Dissemination of flood warning.
- Ensure accurate dissemination of warning messages naming GPs & Taluks with details of flow & likely damage.
- Monitoring and protection of irrigation infrastructures.
- Inspection of bunds of irrigation channels, bridges, culverts, control gates and overflow channels.
- Inspection and repair of pumps, generator, motor equipments, station buildings.
- Community mobilization in breach closure
- Recovery Activities:
- Strengthening of infrastructure and human resources.
- Review and documentation.
- Sharing of experiences and lessons learnt.
- Training of staff.
- Development of checklists and contingency plans.

6.11 Fisheries

Prevention Activities

- Registration of boats and fishermen.
- Building community awareness on weather phenomena and warning system especially on Do's and Don'ts on receipt of weather related warnings.
- Assist in providing life saving items like life jackets, hand radios, etc.
- Certifying the usability of all boats and notifying their carrying capacities.
- Capacity building of Swimmers with Life Saving Skills and improvisation of boats which can be used during emergencies.
- Train up young Swimmers as Life Guards who may be used in search & rescue operation and hire their services during emergency.

Response Activities

- Ensure warning dissemination to fishing communities living in vulnerable pockets.
- Responsible for mobilizing boats during emergencies and for payment of wages to boatmen hired during emergencies.

- Support in mobilization and additional deployment of boats during emergencies.
- Assess the losses of fisheries and aquaculture assets and the needs of persons and communities affected by emergency.

Recovery Activities

- Provide compensations and advice to affected individuals, community.
- Plan for rehabilitation in the long run of the vulnerable folk including resettlement, insurance, etc., improved communication system as a part of the communication hub for warning dissemination, especially for communities residing in high-risk areas.

6.12 Forest Department:

Prevention activities

- Promotion of shelter belt plantation.
- Publishing for public knowledge details of forest cover, use of land under the forest department, the rate of depletion and its causes.
- Keep saws (both power and manual) in working conditions.
- Provision of seedling to the community and encouraging plantation activities, promoting nurseries for providing seedlings in case of loss of trees due natural and manmade disasters.

6.13 Transport Department:

Prevention Activities

- Listing of vehicles which can be used for emergency operation.
- Safety accreditation, enforcement and compliance.
- Ensuring vehicles follow accepted standards.
- Build awareness on road safety and traffic rules through awareness campaign, use of different strategies and training to school children.
- Ensure proper enforcement of safety regulations Response Activities.
- Requisition vehicles, trucks, and other means of transport to help in the emergency operations.
- Participate in post impact assessment of emergency situation.
- Support in search, rescue and first aid.
- Failure to cooperate and misappropriation of relief materials to invite disqualification from the post.

Recovery Activities

- Provision of personal support services e.g. Counseling.
- Repair/restoration of infrastructure e.g. roads, bridges, public amenities.
- Supporting the GPs in development of storage and in playing a key role and in the coordination of management and distribution of relief and rehabilitation materials.

- The G.P. members to be trained to act as an effective interface between the community, NGOs, and other developmental organizations.
- Provide training so that the elected representatives can act as effective supportive agencies for reconstruction and recovery activities.

6.14 Rural Development & Panchayath Raj

Preventive Activities

- Develop prevention/mitigation strategies for risk reduction at community level.
- Training of elected representatives on various aspects of disaster management.
- Public awareness on various aspects of disaster management.
- Organize mock drills.
- Promote and support community-based disaster management plans.
- Support strengthening response mechanisms at the G.P. level (e.g., better communication, local storage, search & rescue equipments, etc.).
- Clean drainage channels, organize through community participation trimming of branches before rainy season.
- Ensure alternative routes/means of communication for movement of relief materials and personnel to marooned areas or areas likely to be marooned.
- Assist all the government departments to plan and priorities prevention and preparedness activities while ensuring active community participation.
- Response Activities
- Train up the G.P. Members and Support for timely and appropriate delivery of warning to the community.
- Clearance of blocked drains and roads, including tree removal in the villages.
- Construct alternative temporary roads to restore communication to the villages.
- Panchayathraj Institution to be a part of the damage survey and relief distribution teams to ensure popular participation.
- Operationalise emergency relief centers and emergency shelter.
- Sanitation, drinking water and medical aid arrangements.
- Activities for greater awareness regarding the role of trees and forests for protection during emergencies and also to minimize environmental impact which results owing to deforestation like climate change, soil erosion, etc.
- Increasing involvement of the community, NGOs and Civil Defence in plantation protection and other forests protection during emergencies and also to minimize environmental impact which results owing to deforestation like climate changes, soil erosion, etc.
- Plan for reducing the incidence, and minimize the impact of forest fire.

Response Activities:

- Assist in road clearance.
- Provision of tree cutting equipments.

- Units for tree cutting and disposal to be put under the control of District Commissioner.
- Provision of building materials such as bamboos etc for construction of shelters.

Recovery Activities:

- Take up plantation to make good the damage caused to tree cover.

6.15 Information & Public Relations Department

Prevention Activities

- Creation of public awareness regarding various types of disasters through media campaigns.
- Dissemination of information to public and others concerned regarding do's and don'ts of various disasters.
- Regular liaisoning with the media.

Response Activities

- Setting up of a control room to provide authentic information to public regarding impending emergencies.
- Daily press briefings at fixed times at state & district levels to provide official version.
- Media report & feedback to field officials on a daily basis.
- Keep the public informed about the latest of the emergency situation (area affected, lives lost, etc).
- Keep the public informed about various post-disaster assistances and recovery programmes.

6.16 Revenue Department

- Co-ordination with Govt. of Karnataka, Secretariat and Officers of Govt. of India
- Incident Commanders : Overall control & supervision
- Damage assessment, finalization of reports and declaration of L1/L2 disasters
- Mobilization of finance, resource allocation

6.17 Home Department

- Requisition, deployment and providing necessary logistic support to the armed forces.
- Provide maps for air dropping. Etc.

6.18 Proposal : District Disaster Response Team

- To be trained and equipped as an elite force within the District Departments. The force to be constituted on deputation basis for a period of One Year, in which the maximum age of the deputed personnel should be below 40 Years drawn from Police, Fire & Emergency Services, Home Guards, Revenue Department, Rural Development & Panchayath Raj, Health Department, PWD Department, Energy, Water & Sanitation, CISF (located in Bengaluru Airport and MAH units), Education Department, PSU's, Corporate, Hospitals, Paramedics etc. To develop district level capacity to respond to any emergency.

- Units to be equipped with life saving skills and kits (first aid & CPR), search & rescue equipments, medical supplies, security arrangements, emergency medicine, logistics & communication, emergency ration with a training to be self-sufficient round the clock during emergency.

- By Co-opting Civil Defence we have potential to add good number of volunteers.

- SEARCH & RESCUE TEAMS : All stake holders involving directly or indirectly as part of response team to undergo Search & Rescue Training based on National Guidelines. It is understood by our experience in the past and present, the strength of response system lies in its trained manpower.

Section - 7
HAZARD SPECIFIC DISASTER PLAN AND RESPONSE PLAN

7.0 Introduction:

The Hazard Specific Disaster Management Plan and Response Plan is prepared based on the broad postulates of District Disaster Management Plan report prepared by ATI, Mysore.

The purpose of preparing the Hazard Specific Report for District Disaster Management Action Plan (DDMAP) is -

a) To ascertain the status of existing resources and facilities available with the various agencies involved in the management of disaster in the district.

b) To assess their adequacies and short falls if any in providing a multi disaster response.

c) Suggest institutional strengthening, technology support, upgradation of information system and data management for improving the quality of administrative responses to disaster at the district level and finally.

d) To evolve DDMAP as an effective tool.

OBJECTIVES

The hazard specific response emphasizes responsibility allocation and vertical resourse planning and to avoid mismanagement of resources and overlap of actions, which may exacerbate the situation thereby compounding the disaster effect.

This can be achieved only through: -

a) Knowledge on Hazard

b) Preplanning of proper sequence of response actions.

c) Allocation of responsibilities to the participating agencies.

d) Effective management of resources, and\

e) Developing codes and standard operating procedures for smooth coordination between various departments and relief agencies involved.

EARTHQUAKE MANAGEMENT

7.1 EARTHQUAKE MANAGEMENT

The recent devastation in Gujarat has been eye-opener as regards the magnitude of loss to human life and property. Hence, the District Administration has geared up the various Departments to effectively meet the challenge of an earthquake.
Since, earthquakes strike without forewarning and generally any measurement on the Richter scale is usually a postoperative measure, prevention in respect of earthquakes is imperative.

The main hurdles as regards planning are as follows:

- Structural planning of individual buildings.
- Communication lines.
- Electricity and water supply.
- Health hazards.
- Loss of life, property and employment.
- Preventive steps are required in the following areas:
- Public structures.
- Dams.
- Roads.
- Maintenance of health and prevention of epidemic diseases.

Since, earthquakes are natural calamities dissemination of proper information, awareness, stocking of proper machinery and equipment are the prerequisites to tackle such a situation.

GENERAL STEPS TO BE TAKEN FOR MAINTAINING CALM INCASE OF EARTHQUAKE

- Public to be educated to remain calm and not to panic.
- Not to enter or exit from buildings when tremors are felt.
- If indoors, take protection/shelter under a heavy object, which can sustain weight of heavy objects. Ex. A heavy desk, a study table, a strong cot etc.
- Protect the head with covering such as books, pillows, blankets etc.
- If outdoors to stay away from buildings, walls, tress, etc. as they are likely to collapse or get uprooted.
- If driving, it is safe to stay inside the vehicle, as it is likely to provide protection from falling objects.

ACTION PLAN DURING EARTHQUAKES

- Inform the core committee members to swing into action.
- Summon the fire brigade.
- Inform Road Transport Authorities to stop movement of vehicle.
- Mobilize volunteers, youth, sportsmen, social service workers, Ex-servicemen, Medical personal.
- Make shift arrangements for temporary shelters to displaced persons.
- Providing water and food to the affected.

REHABILITATION OF EARTHQUAKE VICTIMS

The first and foremost requirement consequent upon the earthquake would be an alternate shelter that is capable of withstanding the next tremor.

District Administration has taken steps along with the public works department to ensure that any new constructions that are taken up are capable of withstanding quakes according to

requirement. Wherever possible old and dilapidated buildings are subjected to inspection by the Public Works Department and necessary reinforcements provided.

Road and Rail network to be kept watch to ensure that people do not panic and desert their dwellings.

Control rooms with wireless, transportation and adequate food supplies to be set up at places affected by tremors to keep in constant touch with the District Administration.

First Aid and Medical facilities to be provided on war footing. Services of Jawans, NCC Cadets, Scouts and Guides and other voluntary organization like Lions club, Rotarians to be sought.

TASK FORCE FOR DISASTER MANAGEMENT DURING EARTHQUAKES

Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between Depts.)

AEE, PWD	Dy. SP/CPI	Tahasildar	Taluk Medical Officer	AEE, ZP	Animal Husbandry & Veterinary Services
To provide transport to evacuees and undertake repairs to roads and buildings.	To maintain law and order and provide free passage to evacuees	To provide food, drinking water and milk	To co-ordinate with PHCs and provide medical relief.	To provide clean drinking water	To provide fodder and veterinary services.

DUTIES AND RESPONSIBILITIES

The emergency responsibilities of key persons in the district are listed below. These duties and responsibilities are common to all types of major emergencies or disasters, (i.e., Natural or Manmade). The Emergency Organization Members will prepare, maintain and be guided by these during any major disaster in the district. Individuals assigned to these functions are expected to co-ordinate their actions with the Deputy Commissioner, who is the District Disaster Manager, will co-ordinate the overall action with all other agencies involved including the District Administration.

It may be noted that depending on the type of emergency and also availability of staff and resources, functions of various agencies may vary. At times, each person may be required to assume additional responsibilities in addition to their normal duties. This would be the prerogative of Deputy Commissioner to assign the additional responsibilities to the members of the emergency organization.

It may be necessary to develop agreements with neighboring districts or other organizations if resources are not available within the district for some of these functions;

Following are the duties and responsibilities of the members of the Emergency Organization. These are general in nature and applicable to all types of emergencies.

District Disaster Manager (Deputy Commissioner)

Alternate: Additional Deputy Commissioner: -

It is the responsibility of the Deputy Commissioner to prepare, maintain and update the District Disaster Management Plan for prevention and to respond to minimize injury and damage caused by a major emergency incident or disaster. It is the duty of Dy. Commissioner to list out effective response plans with incident action plans to initiate emergency relief and recovery operations in DDMP. The responsibility also include initiating and maintaining co-ordination and co-operation with various agencies involved and provide prompt information, decisions and infrastructure facilities as requested. He should also mobilize, direct, and co-ordinate the emergency management staffs during emergency.

Following are the main functions during any emergency;

- Declaration of emergency after confirming the magnitude of the disaster.
- Activate the Emergency Control Room at Deputy Commissioner's office and make it functional.
- Co-ordinate and establish contact with all agency involved in the emergency actions.
- Ensure setting up of Local Emergency Control Room close to the scene of accident or at Taluk headquarters where the disaster has struck.
- Ensure actions have been initiated to contain the emergency.
- Have overall supervision of all the emergency relief operations.
- Initiate evacuation of people from affected area with the assistance of police, fire and other agencies.
- Depending on type of emergency, mobilize additional resources like heavy lifting gears line cranes, bulldozers for rescue and mitigation operation.
- Set-up safe shelters for evacuated people and ensure they are provided with food and medical attention as the need be.
- Monitor progress or disaster especially in case of natural disasters like cyclone or floods by getting information from various agencies involved and mobilize additional support to mitigate the effects of disaster.
- Keep the State Administration informed regarding the disaster and the steps taken to contain the same.
- Issue statement to the press (both print and electronic media) on the prevailing conditions and the steps being taken by the District Administration to mitigate effects of the disaster.
- Get mutual aid from neighboring districts the Major Hazard Industries or seek the assistance of voluntary organization.
- If required, set-up mobile first aid centre or temporary health centres in the affected area or in the safe shelters.
- Visit the scene of the disaster to have first hand information about the rescue or mitigative operations that are being carried out.
- In case of floods, carry out aerial survey of the affected area to have preliminary estimates of the extent of damage caused.
- To co-ordinate with the state government through Principal Secretary, Dept. of Labor, Govt. of Karnataka and mobilize the help of Army/Navy/Air force or other agencies are requires.
- Call off emergency after confirming that all the actions have been taken to normalize the conditions and it is safe for people to re-enter the affected areas.

Disaster Manager (Assistant Commissioner)

Alternate: - Tahsildar

The concerned Assistant Commissioner is Disaster Manager and he would rush to the Local Emergency Control Room (LECR) which is set up at the taluk headquarter of the affected taluk. He would function as the link between the affected area and the District Disaster Manager based at the main ECR located in the Deputy Commissioner office at Bengaluru Rural.

Following are the main functions during any emergency: -

- Set up the LECR at the concerned Taluk headquarters or at a safe place close to the scene of the disaster.
- Depending on the nature of emergency, co-ordinate with the various agencies at local level.
- Initiate the rescue operation with the help of local police, fire or other voluntary organisations and mutual aid members.
- Have close interaction with the Site Controller to ensure proper actions have been taken.
- Visit the affected area to gain first hand information of various steps being taken to mitigate the effects of the disaster.
- Keep the main Emergency Control Room at district head quarters informed about the developments on a regular basis and request for additional help by way of resources or specialized manpower or equipment.

Site Controller (Tahsildar of affected Taluk)

Alternate: - Deputy Tahsildar

The Site Controller would be at the scene of the disaster or accident and would be reporting to the Disaster Manager located in the Local Emergency Control Room. He is the person who is dealing with the disaster directly in association with the various other emergency services. He would be in direct contact with the Disaster Manager based at the Local Emergency Control Room (LECR).

His responsibilities vary widely depending on the type of emergency. It could be a natural disaster like flood the effects are wide spread where rescue work would be of main concern. It could be a road accident involving a tanker carrying hazardous chemical where quick action has to be taken to arrest the leakage, if any, followed by evacuation of people if required.

Following are the main functions any emergency: -

- Take measures to mitigate the emergency in association with various emergency services like fire and police.
- Keep in constant touch with the Local Emergency Control Room at taluk headquarters with available means of communication and keep Disaster Manager informed about the developments on regular basis.
- Request for additional help like specialized manpower or equipment to effectively handle the emergency.

- Rescue and evacuate the people from affected area and shift them to safe shelters.
- Ensure setting up of safe shelters with basic amenities for food sanitation.
- Mobilize medical professional with the help of ECR or LECR and ensure the affected persons are given medical attentions.
- Arrange to shift the injured or sick to specialized hospitals if need be.

Law and Order Function [Superintendent of Police]

Alternate: - Sub-divisional Police Officer (SDPO)

It is observed that the police are the first agency to reach the site during any emergency. The local police initiate the emergency action even before the declaration of emergency and setting up of the ECR at Deputy Commissioner Office, Bengaluru Rural. Even though the main function of the Police is to maintain law and order, it is observed that most of the rescue and relief operation is initiated by the police before arrival of full-fledged rescue teams.

Following are the main functions of the Police (at various) levels during any emergency: -

Superintendent of Police (SP): -

After receiving instructions from Deputy Commissioner, the Superintendent of Police will rush to the ECR and establish contact with the local police station. He would then direct implementation of the action plan through the police station nearest to the scene of disaster.

- Depending on the type of disaster, ensure cordoning off the affected area by the local police.
- Mobilize additional police force from various sources depending on the requirement.
- Ensure co-ordination with various police and other agencies involved in handling the disaster.
- If necessary mobilize the home guards.

SDPO of the concerned Sub Division: -

The SDPO of the sub-division where the disaster has struck would get in touch with the nearest police station and ensure the police team is rushed to the scene of the emergency. His main function would be to act as link between scene of the accident and the Emergency Control Room at Bengaluru Rural.

- On receiving information from the Emergency Control Room, he would rush to the site, assess the situation, obtain first hand information, take control of the overall situation.
- Alert district administration to mobilize Reserve Police personnel for deployment for traffic regulations, supervision of evacuation and security duties.
- Alert area District Commandant of Home guards to mobilize home guards, as necessary (and keep the SP informed).
- Arrange for necessary transportation vehicles for rescue operation in consultation with RTO.
- Arrange for necessary ambulances and other medical facilities for the affected persons in co-ordination with various government and non-governmental agencies.
- Arrange for removal of the dead bodies, identifications and proper preservation.
- Prepare list of missing persons and take immediate steps to trace them.

- Communicate the information to other agencies through police control room.
- Keep in constant touch with ECR to ascertain latest status and intimate police personnel with up to date information regarding response actions and further instructions.
- Arrange for relief to policemen handling the emergency situation.

Circle Inspector: -

The Circle Inspector of the concerned area would also rush to the scene of the accident and direct the various operations like maintaining law and order, barricading and diversion for traffic away from the scene of accident. His main functions would include;

- Maintain direct contact with the local police station through the police mobile van.
- Keep monitoring the progress of various mitigative and rescue measures being undertaken.
- Ensure police personnel are given updated information for announcement during the emergency.
- Mobilize government and private buses through RTO for evacuation.
- Ensure that the bus/vehicle drivers are properly instructed regarding areas to be visited and routes to be taken during evacuation.
- Ensure security duty personnel are at their posts and that only authorized personnel/vehicles are allowed to enter the emergency/affected area with proper identity cards.

Police Inspector of nearest Police Station: -

The local police station plays an important role during any Industrial disaster in the industrial area around concerned area as well as during any road accident in the district involving a tanker carrying hazardous chemicals.

- Divert traffic away from the scene of accident on major roads. Set up barricades and regulate crowd in affected area.
- Warn and advice people about emergency using vehicle mounted with Public Address system in the affected area.
- Evacuate people and livestock in affected areas using rescue routes identified in advance (depending on wind direction in case of gas leak),
- Provide relief to victims till arrival of rescue team.
- Maintenance of law and order at the scene of emergency and prevention of anti social elements from taking advantage of the situation.
- Ensure law and order and maintain security in evacuated areas.
- Assist in rendering first aid medical help to those in need,
- Ensure police personnel on emergency duty receive proper briefing about possible hazardous effects and are provided with personal protective equipment.

Traffic Police: -

Depending on the type of disaster, the traffic police would take control of the traffic movement in the district. During a natural disaster like cyclone or floods the roads may be cut off for a longer period and hence traffic police play a very important role in handling any such emergencies. Their duties would include

- Stop traffic approaching the affected area and advise the crew regarding the impending danger.
- Ensure tankers containing hazardous chemicals are parked in safe places.
- Check for alternate routes and divert the traffic in a controlled manner to prevent congestion in diversions.
- Keep close liaison with other police agencies and assist in crowd control around the affected area.
- Make way for emergency and relief vehicles on priority basis.
- Monitor the condition of the blocked road and resume normal traffic only when the affected area is declared safe.

Factory Inspectorate (Dy. Chief Inspector of Factories)

Alternate: - Senior Inspector of Factories.

Factory Inspectorate plays an important role during any industrial and transportation disaster in which there is large-scale release of hazardous chemicals. In case of such disaster, the Dy. Chief Inspector of Factories or Sr. Inspector of Factories would position themselves in the ECR and help the District Administration by providing expert advice for minimizing the effect of such a disaster.

Main functions: -

- Ensure the on-site emergency management plan of the affected industry (in case of an industrial disaster) has been activated and the mitigative measures are taken to safeguard the people present in the premises.
- Visit the site of accident to ensure proper measures are taken to control the situation.
- Speed up help from mutual aid members, if required to contain the emergency.
- Mobilize the technical experts for advice if required.
- Inspect the area along with the tech. Co-coordinators and report to Deputy Commissioner for giving all clear signals.

Fire Fighting Function (Divisional Fire Officer)

Alternate: - Station Fire Officer

The Divisional fire Officer/Station Officer will place himself in the main Emergency Control Centre and maintain continuous contact on VHF with the Station Officer at the site. Depending on the need, the Divisional Fire Officer will place himself at the site and maintain contact with the Deputy Commissioner in the Main Emergency Control Centre.

The Station Officer/ Sub-Officer/Asst. Sub-Officer of the fire station closest to the scene of disaster will direct fire-fighting operations at the site and keep the Divisional fire officer/station officer informed of the developments at the site.

Main functions: -

- Initiate rescue and fire fighting operation with available means. Ensure that all fire fighters use proper personnel protective equipment while fighting a fire or controlling gas leak.
- Help the District Administration in evacuation of people from affected zones using escape routes decided in advance depending on the wind direction.

- Continuously evaluate the situation and decide the necessity to call in additional Fire Engines from neighboring taluks/district.
- Mobilize the services of the home guards for firefighting through the police.
- He will advice the Deputy Commissioner on the extent of evacuation necessary.
- Preserve valuable evidences, which may be useful for investigation later on.
- Ensure availability of water and make arrangement for private water tanker carriers.
- When the emergency is over, carry out joint inspection of affected areas along with site controller and Technical experts to ensure the emergency is under control.
- Send the message of "SAFE" to DC/SP etc to enable him to officially call off the emergency.

Civil Defence Function – Home guards (District Commandant)

Alternate: - Dy. District Commandant

District Commandant/Dy. Commandant will position themselves in the Emergency Control Room and assist the District Administration in mitigating the emergency. They would be continuous in contact with the field officer/units.

Main functions: -

- Assist the Police or Fire personnel in carrying out their duties.
- Carry out rescue and evacuation operation in close association with other emergency agencies.
- Evacuated areas would need to be guarded against looting.

Public Works/Highway Function (Superintendent Engineer)

Alternate: - Executive Engineer

Depending on type and location of the disaster, the in-charge of the PWD/Highway or Irrigation department representatives would make themselves available at the ECR and maintain close contact with their engineers who would be at the scene of the disaster.

Main functions: -

- Help the police to divert traffic away from the scene of accident along all the major roads.
- Ensure diversion routes are in good condition and traffic does not get jammed.
- Exhibit proper diversion signs conspicuously at suitable places.
- Provide the mobile crane/heavy earthmoving equipment for the purpose of salvage operation.
- Provide necessary assistance as required and directed by Deputy Commissioner/Super intendent of Police.

Transportation Function (RTO)

Alternate: - ARTO

The transportation department plays an important role during any type of disaster as it would involve large-scale evacuation of people in the affected area. RTO/ARTO would be based at ECR and assist the District Administration in mitigating the emergency.

Main functions: -

- Deploy required number of buses with drivers to evacuate people to safe shelters.
- Mobilize various earth moving equipment and other heavy machinery from different sources required for rescue operation.
- Provide mobile workshop if required for urgent repairs/breakdown.
- Provide assistance as required and directed by Superintendent of Police/Deputy Commissioner.

Health Function (District Health Officer)

Alternate: - Assistant Health Officer.

The DHO/AHO would be based in the ECR and assist District Administration in ensuring prompt health care to all affected people through their network in affected areas.

Main functions: -

- On receiving the information about the emergency DHO will mobilize all the available medical & paramedical Staff for handling emergency.
- Rush medical teams from the nearby hospitals to the scene of the disaster or safe shelters nearby.
- Set up first aid centre at the affected area and rescue shelters.
- Mobilize all the available ambulances and assist in shifting the injured/affected persons requiring the additional attention to hospitals.
- Alert all government & private hospitals to meet any emergency and line of treatment to be followed.
- Alert blood banks to maximize their stock.
- Set up temporary emergency wards with medical facilities to receive the affected victims.
- Inform all the doctors/para medicals regarding the nature of emergency as per the message received from the ECR and also inform about the line of treatment to be followed.
- Ensure sufficient stock of drugs and other medical facilities are available.
- Keep in touch with the district Emergency Control Room and Deputy Commissioner and appraise him of the situation and advice him on additional help required from outside agencies.

Welfare Function (Dy. Director, Food and Civil Supply)
Alternate: - Assistant Director, Food and civil Supply

The DFO/AFO would be based in the Emergency Control Room and assist the District Administration in running the safe shelters and relief centres set up during the disaster.

Main functions: -

- Will be overall in-charge or Relief and Rehabilitation activities.
- Identify the rehabilitation centre in advance and establish them in shortest possible time.
- Arrange for orderly transportation of population from the emergency zone and adjacent villages in case evacuation has been ordered by Deputy Commissioner.
- Co-ordinate with the other departments connected with relief measures.
- Provide basic amenities such as food, drinking water and sanitation at the rehabilitation centers.
- Distribute food packets at the affected areas to the people, emergency services agencies such as police, fire fighting personnel and others.
- Exercise any other powers to seek any assistance from the local authorities in achieving this objective.
- Establish contact with the voluntary organizations for assistance.
- To ensure that necessary arrangements are made for the orderly return of all villagers to their respective places once the Deputy Commissioner informs about the termination of the emergency.

Information Function (District Information Officer)
Alternate: - Assistant Information Officer.

The District Information Officer would be based in the Emergency Control Room during any disaster and assist the district authorities in smooth operation.

Main functions: -

- Upon receiving the information from District Administration, the information officer should co-ordinate with media for giving information regarding emergency.
- Co-ordinate with the affected victims' families for giving information of their dear ones if missing/dead/injured.

Pollution Control Function (Dy. Environment Officer)
Alternate: - Assistant Dy. Environment Officer.

The representative of the Pollution Control Board would be based in the Emergency Control Room during any disaster and ensure the environmental damage is kept minimum.

Main functions: -

- Mobilize all possible resources at his disposal and keep the laboratory functioning for analysis of pollutants and emissions.
- Rush the team to the affected area for collection of samples and analyze the same.
- Keep the Emergency Control Room informed about the possible effect on human life as well as environment and corrective actions taken to minimize the same.

FLOOD
&
DROUGHT
MANAGEMENT

7.2 FLOOD MANAGEMENT

Floods cause extensive damage to human, animal and plant life. Flood result in rendering many people homeless leading to devastation and total chaos to lack of communication and means of transportation.

Preventive steps:

Certain advance measures are taken to prevent extensive damages caused by floods.

- Embankments
- Flood ways and diversions of rivers.
- Protection of river banks.
- Community-cum-shelter buildings.

Emergency measures to be taken :

It is imperative that rescue and evaluation operations are taken up by the district administration without any loss of time.

People living in low-lying areas are forewarned to evacuate the place and are shifted to a safe environment. Relief centres are to be set up to provide adequate food, clothing, shelter and water to the persons shifted. For shifting people and animals rafts and boats are to be kept ready and services of ex-service men and sports persons who are good swimmers are employed for relief measures.

Members of the flood relief committee will work in accordance with the action plan and press into service the NGO's and other youth who are trained to meet the exigency.

At the village level, the panchayat members and the volunteers are requested to identify members of the families especially children and ensure that evacuation is done in-groups, which will make the task re-location easier.

Adequate stock of food grains, rafts, boats and other equipment for shifting affected persons and animals. Alternate shelters for communities headed by co-ordinator to ensure proper medical facilities are provided to the affected families.

In case of deaths, proper documentation is to be done after identifying the deceased and necessary steps taken to dispose the corpse to prevent health hazards.

NGO's and volunteers to set up kitchens in the shelters for providing food to the evacuees. Necessary food grains to be provided by the district administration.

Adequate quantity of drinking water is to be supplied by the local administration to the evacuees and where necessary transport facilities be provided for providing water.

Each relief centre to be provided with adequate number of trained personnel from health department. Temporary health centres to be set up with sufficient quantity of medicines and beds. Local doctors of near by towns are to be requisitioned to attend to emergencies.

Core committee members to set up relief centres in each village and work round the clock to co-ordinate with the medical team and relief workers.

Wireless communication is to be kept functioning round the clock all core committee members to be provided with wireless handsets for co-ordination.

TASK FORCE FOR DISASTER MANAGEMENT DURING FLOODS
Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between departments)

AEE,PWD	Dy.Sp/CPI	Tahasildar	Taluk medical officer	AEE, ZP	Animal husban dry&veterinary services
To provide transport and temporary shelters to victims and undertake maintenance of affected roads.	To maintain law and ord er and provi de assistanc e to victims.	To provide food, drinki ng and milk	To coordinate with PHCs and provide medical relief in temporary medical camps.	To provide temporary alternate accommod ation to the victims	To provide fodder and veterinary services and shelter homes for live stock.

DROUGHT MONITORING

Since the District is prone to frequent droughts, emphasis is laid on monitoring the situation during droughts.

Identification of drought-prone villages and taluks has been done and contingent plans have been worked out to meet any unforeseen situation.

The following steps have been taken on a regular basis by the District Administration and Panchayat Offices to combat the menace of drought:

- Digging of bore wells.
- Providing hand pumps and motor pumps wherever required.
- Repair of existing hand pumps and motor pumps.
- Digging of wells.
- De-silting of wells, tank beds.
- Providing pipelines for supply of water.
- Providing water to problems areas through water tankers and other means.
- Providing water storage facilities at all block levels.

Since water contamination and water borne diseases can cause health hazards precautions are taken to ensure that drinking water is properly purified before consumption. The District Health officials and the ZP Department monitor supply of drinking water and ensure that there is no scope for water contamination.

PROVIDING FOOD AND FODDER DURING DROUGHT

Since drought has a cyclic effect there is a drain on resources such as food, water, employment, etc., as there is inadequate soil moisture there is shortage of food and fodder.

The focus during drought would be on the following vital areas:

- Water conservation.
- Supply of essential commodities.
- Employment generation.
- Early warning systems.
- Health care.
- Water supply to remote areas by tankers etc.
- Emphasis on the poorer classes of society.
- Priority to drinking water over irrigation.
- Training to NGO's Volunteers and youth.

The following Action Plan has been formulated by the District Administration to deal with the situation of drought.

Contingency plan prepared in co-ordination with the Water Supply Department, ZP, TP, Municipal Corporations, Irrigation Department and Health Department to ensure availability of adequate quantity of drinking water.

- **Food:** Department of Food and Civil Supplies is in readiness to face any situation of drought and has maintained stock register of availability of food grains.
- **Health:** Department of Health has trained personnel on its rolls to deal with situation of drought and forms an important organ of the Core Committee.
- **Fodder:** An adequate step taken to ensure that fodder for cattle is stored in case of impending drought.
- **Veterinary Facilities:** Veterinary Department has been instructed to store adequate stock of medicines to save lives of cattle and live stock.

TASK FORCE FOR DISASTER MANAGEMENT DURING DROUGHT

Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between departments)

AEE, PWD	AEE, ZP	Tahasildar	Taluk Medical Officer	AEE, MI	Animal Husbandry & Veterinary Services
To generate employment to the needy victims	To provide drinking water to affected areas	To provide food, drinking water and milk	To co-ordinate with PHCs and provide medical relief and set up medical camps if necessary	To generate employment to the needy victims	To provide fodder and veterinary services for live stock.

PREVENTIVE MEASURES TO BE TAKEN IN CASE OF NATURAL DISASTER.

- Prevention of spreading of mine fires and their mitigation
- Landslides and other mass movements can be predicted and the damage minimized
- Measures of landslide control are avoidness, surface drainage sub-surface drainage, vegetation, blasting and hardening.
- In case of earth quakes emergency evacuation, scarch resume and relief from important action plan in disaster management
- Programs of disaster management/ mitigation encompass a wide range of options ranging from issuance flood warnings to reduction of flooding to actual evacuation.

BIOLOGICAL DISASTERS AND EPIDEMICS

7.3 BIOLOGICAL DISASTERS AND EPIDEMICS

Disasters caused by living organisms such as bacteria, virus, fungus, etc. are termed as biological disasters. These organisms may cause epidemics.

Since, epidemics are major health hazards it is necessary to have trained persons to handle disasters of such nature. Proper training in first aid, hygiene and treatment is essential to deal with biological disasters.

To effectively treat cases of epidemics public awareness and education, before and after the epidemic, is vital.

Studies have related that the following are major problems faced before and during the outbreak of epidemics.

- Inadequate medical and health facilities.
- Inadequate supply of pure water.
- Lack of medical and health assistance.
- Absence of effective control of common diseases.
- Unsanitary conditions.
- Malnutrition.

STEPS FOR EFFECTIVELY TACKLING BIOLOGICAL DISASTERS

- Setting up emergency health service.
- Preparing a contingency plan.
- Training of personnel to deal with such emergencies.
- Awareness camps for epidemic prone areas.

Local health authorities have been instructed to be in preparedness with medicines and other infrastructure to deal effectively with outbreak of any epidemic in the district.

TASK FORCE FOR DISASTER MANAGEMENT DURING BIOLOGICAL DISASTERS AND EPIDEMICS

Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between Departments)

AEE, PWD	Tahasildar	Taluk Medical Officer	Animal Husbandry & Veterinary Services
To provide temporary accommodation to the affected persons where necessary	To provide food, drinking water and milk and supervise medical facilities	To co-ordinate with PHCs and provide medical relief and set up medical camps, if necessary	To provide fodder and veterinary services for live stock

FOOD POISONING: Food poisoning is a phenomenon where a large number of people could get affected after consuming contaminated food. This happens mostly during religious and social functions during which food is prepared in make shift kitchen on mass scale. This calls for immediate action by the district administration to provide medical attention, identify the source of poisoning and take corrective actions.

VETERINARY DEPARTMENT :

Livestock population in Bengaluru Rural District largely comprises of cattle, Buffaloes, Sheep rearing being a traditional activity is taken up by shepherds, which is mostly migratory in nature. The livestock and poultry population is furnished.

CATTLE DISEASE:

In the event of an outbreak of cattle diseases like foot and mouth disease, large population of cattle can get affected. Such emergencies will require help of veterinary doctors and possible disposal of large quantity of milk, milk products and meat.

ACCIDENT RELATED DISASTERS

7.4 ACCIDENT RELATED DISASTERS

ROAD ACCIDENT:

Road Accident is a major killer and takes place without warning. Rate on road accidents, are ported indicate that 70% of road accidents, areas from drivers negligence. Some other reasons are inadequate road signages, village roads connecting into the highway & state highways are not sensitized with performance and functional issues, poor road condition, heavy traffic, inadequate traffic management personnel, road planning completely ignored the challenges, users face vis a vis connecting town and village roads to the highways, vehicle resting bays do not have a place for decent resting and washrooms, this has lead to pushing drivers to drive even in half sleep condition long hours to next station, this is found to be one of the reason for fatal accidents, the important concern to observe is if this accidents take place with HAZMAT vehicles near to towns and villages, it may turn out to be disastrous; poor vehicle maintenance possible impacts of accident of individuals are loss of life, trauma care & burns in general.

MITIGATION MEASURES:

1. The provisions of Motor Vehicles Act and other related legislation's and regulations are strictly enforced.
2. Adequate Highway and traffic Aid post will be created.
3. Trauma Care Centers shall be established at every 100 kms. on the National and State Highway.
4. Speed monitoring equipments and computerization of movement of vehicles with adequate checkpoints on the National Highway will be introduced.
5. Fixation of timings to the passenger vehicles to avoid and traffic fan. Identify and designate routes and fixing the time for transportation of hazardous chemicals and other materials.
6. Prohibit the parking of vehicles on National Highway and State Highway.
7. Excavation on roads will be protected well particularly in the night with barricades fluorescent signs and red lights.

8. PWD and National Highway department should concentrate on removal of bottlenecks on National and State Highway.
9. Efforts will be made to provide road dividers on National and State Highway on priority basis.
10. Arrangements will be made adequate embankments/reflector/proper signs on curves.
11. Arrangements will be made information signs boards giving the local of the nearest village Police Station, Hospital, Ghat Traffic Position, Petrol pump, etc. at every traffic aid post.
12. All two-wheeler drivers including pillion riders must always wear the right kind of helmet.
13. Overtaking in vehicles is regulated.
14. Frequently accidents occurring spots will be identified and precautionary measures will be taken.
15. Lanes will be marked for pedestrians/Cyclists.

Since accidents general result in injuries, burns or loss of life providing emergency medical facilities is of utmost importance. Relief teams comprising medical personnel and transport authorities have to be rushed to the spot provide first aid and shifting the injured to the nearest hospital.

Upon arrival at the accident spot the team should immediately provide first aid to the victims and look for persons trapped inside the vehicle. Assistance of the local police should be sought to disperse any crowds that may hinder effective relief measures. If the magnitude of the accident is high help of local NGOs and volunteers may be taken.

In case of major building collapse the major role is to be played by the Fire Department with the assistance of the Police and Health Authorities.

Shifting victims to the nearby hospital should be done after providing necessary first aid. Necessary equipment to remove debris should be kept readily available to save victims who

may be buried inside. Volunteers and NGOs must be trained properly to handle such so that emergency relief is carried on smoothly.

Fire disasters occur mainly due to carelessness or mischief by miscreants. Preventive measures such as avoiding storage of large quantities of combustible materials in one place, firefighting equipment in petrol filling stations, textile, plastic, paper and wood industries should be insisted upon during inspection by the concerned authorities.

Personnel of the fire brigade are well equipped to handle any fire hazards and regular drills and training sessions are held.

TASK FORCE FOR DISASTER MANAGEMENT DURING ACCIDENT, BUILDING AND FIRE DISASTERS

Assistant Commissioner

(To communicate with core committee, supervise and co-ordinate between Departments)

R.T.O	Dy. SP/CPI	Tahasildar	Taluk Medical Officer	Fire Officer
To provide necessary details about the vehicle and transport if necessary	To maintain law and order and inform the kith and kin of victims.	To supervise medical facilities and arrange	To co-ordinate with PHCs and provide First Aid and medical relief.	To provide fire engines and personnel

DISASTER MANAGEMENT PLAN FOR THE FOREST AREAS OF BENGALURU RURAL DISTRICT

Introduction:

Fire plays a very critical role in the habitat management. One of the main factors that have accelerated the degradation of forest cover is the occurrence of fire which has almost become an annual feature. The glaziers, firewood and MFP collectors and tourists tend to set fire deliberately or by accident. Smugglers and poachers also set fire to the forest to divert the attention of field staff. Due to the forest fire the natural regeneration is lost and the forests are deprived of rich humus. Wild animals particularly herbivores and reptiles are the worst

sufferers for want of green foliages while innumerable soil fauna will be destroyed , which play a very important role in maintaining the ecological balance by decomposing and releasing energy from dead plant and animals. Hence preventive and fire control measures have been given much importance in the habitat development.

Forests are very valuable in this district and form a major portion of the area.

Total Area of Forest: 11322 Hectares

Probable causes for forests fires : 2.5 on a Scale of 0 to 5

FAUNA / WILD ANIMALS IN THE FOREST

The district is rich in fauna & flora, the fauna comprises of leopards, sloth bear, bisons, elephants, monkeys, languors, deers, sambars, and other animals like pangolin, porcupines, hares, malabar squirrels, lizards, insects, butterflies, snakes, and birds etc.

Existing practice to tackle the forest fires are as follows :-

Prior to the fire season the fire lines of 3.2 m. width are created to stop the fire from entering from one block to another, these fire lines are created near roads, around plantations, along forest boundaries, D'lines and strips within forest areas.

Forest camps are established at sensitive points and forest staffs stay round the clock & rush to the spot in groups as soon as they get the fire occurrence information over wireless and extinguish the fire.

SECTION 8.0

FIRE & EMERGENCY SERVICES

8.1 Introduction

The beginnings of the fire fighting facilities in Bengaluru can be traced to 1940s predominantly in the Cantonment area. The State Fire Services was initiated in 1965 under the Karnataka Fire Force Act, 1964. The Department which was initially a part of the Police Department started functioning independently in 1965. The department mainly a service oriented department has now been reorganized as a Multi-hazard Response Department (Karnataka State Fire & Emergency Services Department - KSFES) and the first of the responders in all emergencies like fire, building collapses, aviation & major road accidents, floods and other calamities. The overall control of the Department lies with the Home Department of State Government which started with 11 fire stations in 1971. The KSFES currently manages 124 fire stations in the entire state. In Bengaluru alone, KSFES manages 11 fire stations, 4 Fire Protection Squads, a Training Academy and a workshop.

This department also provides ambulance service, wherever ambulances are available, to shift victims of fire and other accidents and also sick persons to hospitals. It also renders advice on fire prevention, fire fighting and evacuation measures. Standby of fire service vehicles during VIP / VVIP visits and for law and order situations is also arranged. Besides, training programmes are conducted regularly to create awareness on fire prevention and fire fighting.

8.2 Trends in Fire accidents

The total number of calls received annually over the last 15 years by the KSFES has been constant around 900 to 1000. But there has been a marginal increase in the last 2 years. A bulk of the calls received have been for small fires & emergencies and at the end their share has been is on the increase. A third of the total accidents of the last decade were of medium to serious fires, their share in 2005 is reduced to only 8 per cent. False calls have been received, constitute around 2 to 4 per cent annually. On an average, the number of calls attended daily by KSFES in Bengaluru today is around 3.1, bulk of which are small fires. The frequency of occurrence of medium fires is once a week and serious fires is once a fortnight.

8.2.1 Table : Trend in the Nature of Calls Received

(Nelamangala,Yeshwanthpur & Peenya)+ (Doddaballapura and Devanahalli) + (Hoskote and Mahdevpura)

Year	Total Call Received	% Share of Calls Received				
		Small	Medium	Serious	False	Others
2006	321+2+100	267+1+71	36+1+9	09+0+1	09+0+4	0+0+15
2007	251+1+61	215+1+49	26+0+11	02+0+1	05+0+0	0+0+0
2008	294+17+86	230+17+68	49+0+10	08+0+1	06+0+2	0+0+5
2009	397+78+134	300+78+123	88+0+10	07+0+1	02+0+0	0+0+0
2010	474+67+134	397+62+105	65+2+8	05+0+0	07+0+2	0+3+19
2011	571+139+114	484+130+72	78+5+23	07+1+0	02+0+2	0+3+17
2012	611+91+131	542+83+95	48+4+15	08+0+0	06+0+0	09+4+21
2013	405+69+80	336+58+61	61+6+12	05+2+2	02+0+0	01+3+5

Source: Karnataka state Fire & Emergency Services Dept., 2013

8.2.2 Table : Taluk wise Hazards and Combined Risk

S. No	Taluk / Dist.	Fire Risk Zones				Earth Quake Hazard	Wind and Cyclone Hazard	Overall Risk Categorys
		Built – up Areas	Agricultural Area	Forest Areas	Combi-ned			
	Bengaluru Rural							
1	Devanhalli	Medium	Medium	Low	Medium	V. Low	Low	Medium
2	Dodballapur	Medium	Medium	Low	Low	V. Low	Low	Low
3	Hoskote	Medium	Medium	Low	Medium	V. Low	Low	Low
4	Nelamangala	Medium	Medium	Medium	Medium	V. Low	V.Low	Low

8.3 Sources of Fire

Nearly a fourth of the fires occurred in residential properties and have been constant in the last 15 years. Commercial and industrial fires & emergencies (mostly of serious magnitude) account for another fourth of the total annual accidents. Other accidents account for nearly half of the total accidents.

8.3.1 Table : Trend in the Source of Fires & Emergencies *(Percentage)* *(Doddaballapura & Devanahalli + Nelamangala + Hoskote)*

Year	Residential	Commercial	Industrial	False	Others
2009	02+93+5	01+50+3	0+89+1	0+2+0	75+160+23
2010	0+99+10	10+78+3	0+125+8	0+7+0	57+165+46
2011	04+89+3	10+111+9	02+104+14	0+2+0	123+265+85
2012	01+150+8	04+86+12	0+110+5	0+1+0	79+264+80
2013	01+126+9	07+35+17	06+74+5	0+2+0	55+168+33

Source: Karnataka state Fire & Emergency Services Department, 03-03-2014.

8.4 Different Kinds of Fires

Fires under category, gas & electrical, account for 37 per cent of the total annual fires. These fires are serious in nature and have been on the increase in the last 15 years.

Table 8.4.1 Trend in the Nature of Fires & Emergencies ***(Nos.)***

(Doddaballapura & Devanahalli + Nelamangala + Hoskote)

Year	Gas Fires	Electrical Fires	Other Fires	False Fires
2009	0+68+2	-+40+0	78+287+23	-
2010	01+64+4	-+61+0	66+342+46	-
2011	01+85+2	01+63+1	137+421+85	-
2012	01+81+5	-+75+2	90+264+80	-
2013	02+56+4	02+56+2	65+291+33	-
2014 upto 3/7/2014	02+ - + -	02+ - + -	68+ - + -	-

Source: Karnataka State Fire & Emergency Services Department, 03/07/2014

8.5 Human Lives Saved:

Table 8.5.1 Human Lives Saved by KSFES in Numbers & in Percentage
(Doddaballapura & Devanahalli + Nelamangala + Hoskote)

Year	Human Lives Involved	No. of Human Lives	
		Injured / Saved	Lives Lost
2009	- + 24 + -	02 + 15 + -	01 + 9 + -
2010	- + 33 + -	- + 25 + -	02 + 8 + -
2011	- + 25 + -	- + 20 + -	01 + 5 + -
2012	- + 22 + -	02 + 14 + -	- + 8 + -
2013	- + 35 + -	- + 23 + -	05 + 12 + -
2014 up yo 3/7/2014	- + - + -	- + - + -	01 + - + -

Source: Karnataka State Fire & Emergency Services Department, 3/7/2014

8.6 Properties Saved

While the overall property involved in the fires annually has been on the increase, the amount saved has indicates a fluctuating trend. The Property damaged per accident annually has been showing a fluctuating trend over the last 5 years.

8.6.1 Table: Share of Property Saved by KSFES

Doddaballapura & Devanahalli	Gross Total Value of the Property Involved			
	Gross Value	Damaged	Saved	% Saved
2010	14126500	1980500	12146000	
2011	341143000	6550700	334592300	
2012	30752000	4533750	26218250	
2013	112482000	15657000	96825000	
2014	9766000	2605500	7160500	

Source: Karnataka State Fire & Emergency Services Department, 31-03-2014.

Nelamangala	Gross Total Value of the Property Involved			
	Gross Value	Damaged	Saved	% Saved
2010	818566700	336787300	481779400	
2011	425046900	96527000	328519900	
2012	303759000	102870600	2000888400	
2013	209157200	34160800	174996400	
2014	-			

Source: Karnataka State Fire & Emergency Services Department, 31-03-2014.

Hoskote	Gross Total Value of the Property Involved			
	Gross Value	Damaged	Saved	% Saved
2010	26653500	3753650	22899850	
2011	29352400	4726000	24626400	
2012	31813000	6028900	25784100	
2013	15849500	2794400	13055100	
2014	-			

Source: Karnataka State Fire & Emergency Services Department, 31-03-2014.

8.7 KSFES - Manpower & Infrastructure

Currently there are 11 fire stations in Bengaluru Urban District, which serve the needs of Bengaluru City. They are located at South (Mayo Hall), North (Mysore road), High Grounds (Sheshadri Road), Jayanagar, Banashankari, Yeshwantapur, Peenya, Whitefield, Cooks Town, Munireddy Palaya and Rajajinagar. This apart, there are 3 stations in the Rural District located at Chennapatna, Kanakpura and Nelamangala. Currently, the stations at South, North, High-grounds and Jayanagar are functioning daily in 3 shifts and the rest in 2 shifts.

Four Fire Protection Squads are located at Vidhana Soudha, Raj Bhavan, MS Buiiding and VV Towers. 4 control rooms as indicated below:

1. Central Fire Control Room at Sheshadri road.
2. Wireless Control Room at Sheshadri road.
3. Wireless Control Room at VV towers.
4. DG Control Room at A.M. road.

Workshops are located at Bannerghatta Road and Commissariat Road. The training academy called R.A. Mundkur Fire & Emergency Services Academy is located on Bannerghatta Road.

The vehicles used by KSFES include:

Water Tenders	22	Jeeps & Cars	21
Water Lorries	10	High pressure pumps	2
Water Bouzers	2	Portable pumps	20
Rescue Vans	1	Ambulance	2
Snorkel & TTL unit	2	Agni unit	2
Towing tenders	10	Foam tenders	2

The manpower in the KSFES includes technical & administrative staff at the head quarters, technical & mechanical staff at field offices and Police Staff on deputation in the field of wireless communication.

RA Mundkur Fire Service Academy on Bannerghatta road in Bengaluru City imparts induction training to newly recruited Firemen, Fireman Drivers, Fire Station Officers and also to the employees of various private and public sectors.

The fire Service Workshop situated on Bannerghatta road, Bengaluru city undertakes repairs and replacement of Fire Services vehicles and pumps. It also caters to the needs of the vehicles during emergency situations in order to keep the vehicles of the department roadworthy.

8.8 Vehicle types used

Depending on the nature of fires & emergencies, different types of vehicles are used are indicated in the table below.

8.8.1 Table : Vehicles used for Fire Fighting & Rescue

Vehicle Category	Name	Water Capacity (litres)
Regular Vehicles		
L1	Bike – Agni	09 x 2 litres
L2	Jeep- Varuna	45 + 09 litres
L3	Mini-water tender – W	3500 litres
L4	Water Tender – W	4500 litres
L5	Water Lorry – WL	9000 litres
L6	Water Bouzer – WB	16000 litres
L7	Foam Tender – FT	4000 litres
L8	Rescue Van – RV	Carries only search and rescue equipments.
L9	Hydraulic Platform – TTL & SKL	Water has to be fed from external source
L10	Ambulance	For conveyance of causalities.

8.9 EMERGENCY MANAGEMENT SYSTEM (Fire & Emergency Service)

There are five interconnected steps to manage emergencies / disasters. They are:

Planning: Proper-planning helps in analysing and documenting the possibility of emergencies and its impact on life and property. This requires an analysis of past disasters, adopting of new techniques and equipments based on the previous experiences; analysis and research of past data on fires, rescue operations and other emergencies. Computer Servers of high capacity are needed to handle this requirement. Voice log, GIS / GPS are also needed to collect digital data on frequency of calls.

Mitigation: This phase helps in eliminating or reducing the possibility of a disaster situation e.g. restricting the construction of a high rise building in a low lying area or potential flood zone. The planning helps in evolving a road map of contingency plan for standard methods of approach to different disastrous situations, before, during and after.

Preparedness: This phase helps mitigation, when a disaster cannot be prevented. This phase involves both Government and non-Government agencies to develop disaster management plans to mitigate a situation. Advance equipments like GIS / GPS, satellite imaging, early warning devices, effective wireless communication, etc help the emergency responders like Fire & Emergency Services in planning the route, mobilizing the vehicles / equipment, etc.

Response: The response to a disaster by the first responders like Fire & Emergency Services, is to locate the victim (search and rescue), rescue the causality to safety, provide first aid and emergency medical help, providing safe food and safe shelter, etc. This demands HAZMAT vans, rescue vans, search and rescue equipments, ambulances, first aid equipments, etc. The first responders have to help in stabilizing the situation and also assist other agencies in speedy recovery of damaged system.

Recovery: This involves activities necessary to return all system to normal. It may be a short-term recovery or long-term recovery. District administration and other agencies look after this part of the job. Fire and emergency services department has to assist the district administration.

Issues & Concerns

a. Urban encroachment into Rural district raising manpower infrastructure and equipement challenges. Financial decisions are becoming more and more cumbersome and lengthy for quick decision to procure latest equipements and to train manpower on HAZMAT.

b. Lack of state of the art high tech Hazmat-cum-rescue vans, specialized rescue vans, foam tenders, water bouzers, water tenders, SAR equipment, proximity suits, NBC disaster mitigation equipment.

c. Lack of equipment that facilitates real time fleet management, disaster monitoring system, GIS / GPS that facilitate creation of a Command & Control System for a city that is expanding horizontally & vertically.

d. Lack of scientifically drafted training and capacity building programmes on new equipment.

e. Lack of trained manpower.

f. No database comprising standard operating procedures, statistics & specifications. The incident risk analysis is judged based on experiences, requires effective systems and analytical methods to avoid wastage of resources.

Details of vehicles available at Hoskote, Nelamangala and Doddaballapura fire stations in the year 2010 – 2011.

Sl.No.	Details of Vehicles and Equipment	Bengaluru Rural District Taluks			
		Hoskote	Doddaballapura	Nelamangala	Devanahalli
01	Fire Water Tenders	02	02	02	Not Yet opened
02	Portable pumps	01	01	01	-
03	Portable Lights	01	01	01	-
04	Life Jackets	10	10	10	-
05	Life buoy	10	10	10	-
06	Breathing apparatus sets	02	08	03	-
07	Rescue ropes	05	07	05	-
08	Fire racks	02	02	02	-
09	Fire hooks	02	02	01	-
10	Torches	04	03	02	-
11	Fire man axe	01	01	02	-
12	Graphnols	01	01	02	-
13	First Aid Boxes	01	02	01	-

SECTION - 9.0

Factories, Boilers & Industrial Safety

9.1 INTRODUCTION

For centuries the rural district of Bengaluru is well known for its royal splendor, temples, major public sectors and private sector industries, The Main categories are software industries, ready made Garments, defense establishments, food industries, pharmaceuticals industries, etc., The rural district of Bengaluru has seen considerable growth in industrial activities. In the recent past this has provided ample of scope for employment to the local as well as outsiders.

Industrial prosperity is an important out-comes of successful management. We all know that the basic factors for successful management are men, money, material, methods and technology. The Bengaluru rural district has produced specialists with proven achievements who have contributed their might to the overall development of software activities, science & technology and commerce.

Any industry relies on different resources for its manufacturing activity to which value is added before reaching the end user. In the process of value addition, certain hazardous chemicals are used predominantly. One of the off-shots of the industrialization is the possible threat to the human being and the environment including flora and fauna around us because of the use of abundant quantity of hazardous chemicals. It is our experience that any emergency arising out of hazardous chemicals at times grows beyond the control resulting loss of life and property. In this context, unless adequate care is taken in handling such hazardous materials, the management as well as the authorities concerned are failing in their social responsibility. Therefore, it is essential to identify the potential hazards at the site where hazardous chemicals are used, stored and handled and equip the required infrastructure facilities to tackle the emergency effectively. The basic concern is not only to identify the potential hazard but also to develop a crisis management plan for the entire Bengaluru rural district.

In order to fulfill the basic requirement an exercise was undertaken for the first in Bengaluru rural district wherein the expertise of professionals and information were pooled together under the direct supervision of the district administration.

The Bengaluru rural district houses 16 Major Accident Hazardous Units, majority amongst these units stores and handles hazardous chemicals Viz. LPG (Liquefied Petroleum Gas), which is highly prone to cause fire and explosive hazards. The issue of requirement of a comprehensive Off-site emergency plan was discussed in detail and at length at the instance of District crisis group members, which consists of out side experts also. Since the statutes which are in force demands preparation of a document which deals with preparedness procedure in the event of any emergency arising out of these MAH units, by the district management. In compliance to this, Bengaluru rural district is preparing this comprehensive document to meet the objective.

The spontaneous response from everybody concerned including the district crisis group members and industries are overwhelming which has culminated in finalising of this document which address the important issues like emergency preparedness, medical response, evacuation, rehabilitation, fire fighting, maintenance of law and order, creating public awareness etc., This document envisages the roles and responsibilities of various authorities, including the role played not only NGO's but also the entrepreneurs and public.

It is the constant and continuous endeavor of the district administration to ensure fool proof safety of the workers working in hazardous industries including the public residing in and around the hazardous industries and to protect flora and fauna and improve quality of life.

It is hoped that, this comprehensive document will be of immense help to manage the possible crisis from the major accident hazardous units.

The Four Taluks of the District comprises of Three existing zones namely Doddaballpur – Zone I, Nelamangala as Zone – II, Hoskote as Zone III and Devanahalli under Zone IV.

The Following major Industries are coming under the above zones;

Taluk	**Major HAZMAT Industries in the District – 2010**			
	Doddaballapura	**Nelamangla**	**Hoskote**	**Devanahalli**
Zone	**I**	**II**	**III**	**IV**
	Rittal India Pvt. Ltd	ASIA LPG Pvt. Ltd	IOC Ltd – Indane Bottling Plant	Indian Oil Skytanking Ltd
	TATA Steel Ltd	Jyothi FAS Pvt. Ltd	BPCL	
	Musashi Auto Parts Pvt. Ltd.	INDO GAS	IOCL	
		Total Oil India Pvt. Ltd	HPCL	
		Sree Surya Gas Corporation	Orient Bell Ceramics Ltd	
		Sneha Petroleum Pvt. Ltd		
		Jindal Alluminium Ltd. (Rollling Mill Division)		

The profiles of these corporations with address, contact persons, activities, storage capacity and type of Risk with Analysis is enclosed. Most of the companies listed in the above chart come under Major Accident Harzard units having potential to generate very high magnitude of Damage in an incident. The onsite comprehensive Disaster Management Plan of these facilities are enclosed based on the findings and submissions of Factories, Boilers & Industrial Safety Unit of Industry & Commerce Department.

The findings and submissions also mention Prevention, Response and Recovery Plans. It is noted to update the local administration with adequate training about these facilities and their hazard potential to ensure well planned development in the surrounding areas. It is also planned after detail understanding of the Hazards to decentralise the Incident command structure of the District, with Tashildar as Area Commander and DySP of the Taluk as his coordinator for effective incident response. These recommendations are incorporated after observing the present District profile and vehicle traffic situation which may be a major hurdle to the district response time during any incident. These facilities falling under severe hazard category, it is also very important the respective Taluks are will be well equipped with equipments, resources, network, training, skill drills and mock drills involving the risk based companies and with the surrounding vulnerable communities twice a year. The vulnerable areas as listed by the risk analysis will be treated as most sensitive or hazard prone areas. The stake holders and the local administration will constitute a team and meet once in a three months to assess the present and future development challenges surrounding these areas. On high priority the district administration will establish an Emergency

Operation Centre (EOC) at Taluk level to be managed by Area Commander and supported by Incident Commander of the District.

The following is the submission from Factories, Boilers and Industrial Safety Department;

9.2 CONSTITUTION OF DISTRICT CRISIS GROUP

The Crisis Group of the Bengaluru Rural District is formulated under The Chemical Accidents (Emergency Planning, Preparedness And Response) Rules, 1996. The Govt. of Karnataka under the Rules conferred vide Section 8 of the said Rules, Issued a Notification No. KAEE 36 KABANI 98, Dated: 04.09.1998, constituted the District Crisis Group of Bengaluru Rural District to implement Environmental Protection Act and the Rules made there under.. The following is the composition of District Crisis Group.

01	Deputy Commissioner, Bengaluru Rural Dist.	:Chairman
02	Superintendent of Police. Bengaluru Rural Dist.	:Member
03	Addl. Deputy Commissioner (Emergency Officer), Bengaluru Rural Dist.	:Member
04	District Fire Officer, Bengaluru Rural Dist.	:Member
05	Deputy Director, Information Department, Bengaluru Rural Dist.	:Member
06	District Commandant, Home Guards, Bengaluru Rural Dist.	:Member
07	District Health Officer, Bengaluru Rural Dist.	:Member
08	Superintendent Engineer, BESCOM, Bengaluru Rural Dist.	:Member
09	Deputy Controller of Explosives, Mangalore.	:Member
10	Executive Engineer, Panchayath Raj Engineering Dept. Bengaluru Rural Dist.	:Member
11	Environmental Officer, KSPCB, Bengaluru Rural Dist.	:Member
12	Joint Director of Agriculture, Bengaluru Rural Dist.	:Member

13	Regional Transport Officer. Bengaluru Rural Dist.	:Member
14	Sri. Alampalli Venkataraman, President, BMS, State Unit.	:Member
15	Occupational Safety & Health Experts:	
a.	Sri. Rajamohan Regional Occupational Health Centre Bengaluru.	:Member
b.	Sri. Purushotham Secretary, National Safety Council	:Member
c.	Sri. Vijayakumar, Safety Officer, Toyota Kirloskar Motor Ltd.,	:Member
d.	H O D, Dept. of Community Medicine M V J Medical Collage, Hoskote,	:Member
16	Sr. Plant Manager, Indane Bottling Plant, IOCL, Devanagonthi, Hoskote,	:Member
17	Deputy Director of Factories, Divn.-2, Bengaluru.	**:**Member Secretary

9.3 OFF SITE EMERGENCY PLAN – Synopsis

The preparation of OFF-SITE Emergency plan is to classify and quantity the hazardous chemicals used, stored, manufactured and imported for industrial activity. The guidelines formulated under THE CHEMICAL ACCIDENTS (Emergency Planning, preparedness and response) RULES, 1996 are considered as basic inputs in preparation of this plan. **THE OFF- SITE EMERGENCY PLAN** is always drawn up to M**aximum Credible Accident Scenario** of a major accident or a D**isaster.**

The definition of a major accident or a disaster as defined under the rule noted supra is reproduced below for an easy and quick understanding.

Definition; -

MAJOR ACCIDENT OR DISASTER;

An occurrence of such magnitude as to create a situation in which the normal pattern of life with in industrial complex suddenly disrupted, affecting the neighborhood seriously with the result that the people are plunged in the helplessness and suffering. They may need food; shelter, water, medical attention, clothing, protection, counseling, information, transportation, rehabilitation, sustainability, etc. may cause serious bodily injury or loss of life. It may also cause extensive damage to property.

BENGALURU RURAL DISTRICT

The district administration has identified around 50 industries as hazardous industries in Bengaluru Rural District. Out of these, 15 industries are classified as **MAJOR ACCIDENT HAZARDOUS** industries. The details of which are furnished in this chapter.

The complete study of chemical stored, used, stored, transported and manufactured in the industrial establishments noted in chapter 4 reveals that the hazards associated with these chemicals can be broadly classified into three categories viz., **FIRE, EXPLOSION AND COMBINATION OF BOTH**

CONSEQUENTLY THE DISASTERS COULD BE;

A) FIRE

B) EXPLOSION

C) COMBINATION OF BOTH

SCENARIO OF DISASTERS

DIFFERENT PHASES OF DISASTERS;-

A) WARNING PHASE

B) PERIOD OF IMPACT

C) RESCUE PHASE

D) RELIEF PHASE

E) REHABILITATION PHASE

9.4 CATEGORIES OF DISASTERS

LESS SEVERE;

The hazard would not result in any serious injuries to the personnel, would not result in property damage, illness amongst the personnel, injuries to live stock, no impact on environment, more so the incident which can be controlled by the organization itself or by seeking the assistance of mutual aid partners.

SEVERE;

The hazard would cause injuries and illness to personnel and live stock, result in property damage, will have some kind of effect on environment. The incident cannot be brought under control by the organization itself. The support and assistance of mutual partners is required.

CRITICAL;

The hazard would be cause serious injuries to personnel, live stock, damage of property and equipment will have serious effect on environment and Eco-system, result in public commotion. Once again the situation cannot be brought under control by the organization itself. Needs support form the mutual aid partners but from out side agencies like the fire brigade, police, environmental agencies and other related departments.

CATASTROPHIC;

The hazard causing large scale fatalities to humans and livestocks, wide spread illness, destruction of property and equipment, severe effect on environment and Eco- system. Results in public chaos leading to long term effect for mankind and environment. Need of evacuation and rehabilitation activities. Incident beyond the control of onsite resources will call for the intervention of district administration.

Bengaluru Rural Districts 15 MAH units, respectively. They primarily handle large quantities of chemicals. The possible hazards include:

Chemical used in Bengaluru & Associated Hazards

Nature of Chemical	Associated Hazard
LPG	Fire / explosion
Petroleum products	Fire / explosion
Chlorine	Toxic & corrosive
Liquid oxygen	Cold burns / oxidising
Carbon di sulphide	Toxic
Ammonia	Toxic & corrosive
Liquid Nitrogen	Cold burns
Corex gas	Fire / explosion
Hydrochloric acid	Corrosive
Sulphuric acid	Corrosive
Phosphoric acid	Corrosive
Blast furnace gas	Toxic, Fire / explosion
Others	Fire / explosion

9.5 GROUPING, CLASSIFICATION, HAZARDS AND FIRST AID FOR CHEMICAL IDENTIFIED

GROUP OF CHEMICALS	CLASSIFICATION	HAZARDS	FIRST – AID
Motor Spirit	Petroleum Class-B	Fire and Explosion Hazard	**In case of exposures/inhalation**; Shift the person to safe area, and provide artificial respiration, seek medical attention. **Skin contact:-** Wash with water till you see no trace of chemical substance on you. **Eye contact**; Wash eyes with water till
HSD	Petroleum Class-B	Fire and Explosion Hazard	
LPG	Highly Inflammable	Fire and Explosion Hazard	

ATF	Highly Inflammable	Fire and Explosion Hazard	you see no trace of chemical substance in your eye, and contact medical assistance for eye care. .

9.6 OFF SITE EMERGENCY PLAN

The main hazard identified in the 15 MAH industries can be classified as **FIRE or EXPLOSION or COMBINATION OF BOTH.** The consequential effects would be burn injuries due to thermal radiation, breakage of glass, windowpanes due to shock waves and destruction of property due to fire. The extent of damage will vary from industry to industry.

DECLARER OF EMERGENCY

Then Dy. Commissioner/District Magistrate, Bengaluru, Rural District, who is also the Chairman of District Crisis Group (hereinafter also called "Chief Emergency Co-ordinator". In brief, CEC), is the declarer of Off-Site Emergency. In the absence of the Dy.Commissioner, the Superintendent of Police, Bengaluru Rural District, will assure the role and act as Chief Emergency Coordinator.

NOTIFICATION OF EMERGENCY

As the administrative office of the CEC is located in the Bengaluru Urban District, where as the Major Accident Hazard units, which are vulnerable to cause emergency due from the Hazardous Chemicals, are located at the taluka head quarters. It is very difficult for the CEC to reach the Incident Area and co-ordinate the measures to mitigate the emergency. Hence, initially the information on the emergency from the incident controller of the respective MAH unit will be transmitted to the Control Room located at the Taluka Head quarters and the Tahasildar/ Taluka Magistrate. The Tahasildar / Taluka Magistrate of the Taluka will immediately assume the charge, analyze and scrutinize the information as deemed necessary and thereafter notify the Off-site emergency. Once the Off Site emergency is notified, he will co-ordinate the first responders available at the taluka level and initiates the mitigation procedure. The associated functions of the responders available at the Taluka have been explained in the plan. In the mean time, the Tahasildar will pass on the information to the CEC and the Control Room available at the office of the CEC for further actions.

MAIN FUNCTIONS OF CHIEF EMERGENCY CO- ORDINATOR (C.E.C.)

(Deputy Commissioner, Bengaluru Rural District and the Tahasildar of the District)

Declarer and notification of emergency

1) Taking control of situation to contain the emergency.
2) Dissemination / acceptance of information to / from various agencies like rescue, police, fire, transportation, traffic control, medical aid, maintenance for the affected centre, rallying posts, parking yards, supply of food & water for the affected people and the evacuees, live-stock.
3) Mobilization of all resources to mitigate the emergency.
4. Establishment of safe rescue routes, evacuation of people, supplementing fire fighting / rescue equipment at the site of Emergency.
5. Activation of various NGO's/Voluntary Organizations for necessary materials.
6. Establishment liaison with public, media, kith and kin of the affected persons, Member Secretary, State Level Crisis Group, etc.,
7. Notification of termination of Emergency and Declaration of all clear signal.
8. Assessment of damage to human life, livestock, property, environment and provide adequate relief for subsistence.
9. Providing adequate compensation for loss of life and property.
10. Any other function, as deemed necessary.

EMERGENCY CONTROL ROOM

1. A dedicated room at the office of the Dy. Commissioner and the Tahasildars of the respective talukas has been identified as Emergency Control Room.
2. The CEC/Tahasildar of the Taluka on receiving information from the site of Emergency Controller will pass on required information to the responders on need basis. The Officer-In charge of the Control Room will disseminate the same without distortion and loss of time to all the operating agencies via Wireless Communication System.
3. In addition, the Officer In charge of Control Room will receive the communication from the emergency site and the responder's interalia update the same to CEC.
4. On receipt of information from the emergency site, competent communicator will take charge to manage the Control Room until the termination of Emergency.
5. The control room will be equipped with all the logistics and data bank for effective and efficient communication. The equipment, logistics, the emergency phone numbers and other related information's are annexed to this documents

EMERGENCY PARKING YARD

The parking yard facilities are to be provided for rescue vehicles, plant vehicles, District Crisis Group management vehicles and any other vehicles related to emergency. It will be located at a distance, which is more than the safe distance from respective units keeping maximum risk in mind.

RALLYING POSTS-CUM-RESCUE SHELTERS

The number of persons likely to be affected will be assessed taking into consideration the maximum credible accident scenario of each unit. The industry-wise details are identified and updated in the document. The CEC will decide on this issue and directions will be issued to the responder identified.

The rescue shelters and the rallying posts are to be identified according to the circumstances and conditions. The decision will be taken by the CEC in consultation with the Department of Animal Husbandry and Police. Adequate number of officers from the department of Revenue, Animal Husbandry and veterinary Sciences will be appointed by the CEC.

MOBILE COMMUNICATION SYSTEM (CONVOY TEAM)

1. The CEC in consultation with Police will deploy as many numbers of communication vehicles as required, fitted with Public address system. VHF, mobile talkies etc., for dissemination of correct information, do's/don'ts depending on the type of emergency and its severity, to safeguard the life of public and property.
2. The convoy team will be under direct control, contact with CEC during the continuance of Emergency, and convey the messages to Public as directed by the CEC and vice-versa.
3. The convoy team will be in constant touch with the Revenue authorities managing the Rescue Shelter cum Rallying Post, Parking yards etc., and accordingly initiate appropriate action. The convoy team will also communicate the position of Law & Order traffic movement, the No. of people affected, livestock is affected to CEC.
4. An account of number of persons likely to be affected industry wise is given for ready reference.

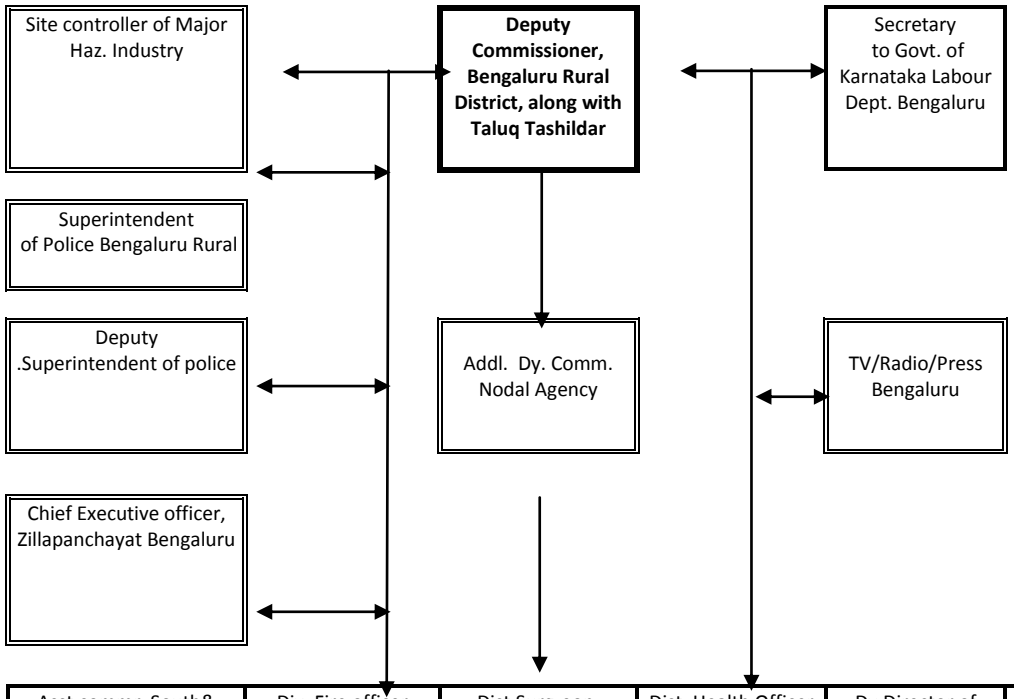
TERMINATION OF EMERGENCY AND ALL CLEAR SIGNAL

The CEC will undertake an on-the-spot study along with the concerned agencies to assess the situation and declare termination of emergency. Then he will issue order for All Clear Signal.

REHABILITATION

On termination of emergency, the CEC will assess the damage in consultation with appropriate agencies and take a decision to rehabilitate the affected including relief.

NET WORK OFF-SITE EMERGENCY PLAN AT A GLANCE



Asst.commr South& North	Div. Fire officer Bengaluru	Dist.Surg-eon.	Dist. Health Officer Bengaluru	Dy.Director of factories Bengaluru-2	Pollution Control Bengaluru	Materiological Dept Bengaluru
Occupational Health &Safety Experts	Dy. Director of Agriculture Bengaluru	Executive Engineer PWD Bengaluru	Executive Officers Taluk Panchayats	Suptd Engineer P.H.E B'Lore	RTO, Y.Pura, Rajagi-nagar & Indiranagar	Heavy Material Handling Equipment Assn. B"Lore
Dist. Commndt. Homeguards B"Lore	Mutual Aid Industries	Private Hospitals B'Lore	Dy. Director Animal husbandry B"Lore	Suptd. Engineer KPTCL, B"Lore	Jt. Director Public Instruction	Truckers association
Sr. General Manager telecom Dept.B"Lore	Voluntry Organisations	Divisional controller K.S.R.T.C	Govt. hospitals B"lore	District information Officer-Bengaluru	Block Education officer	Joint Director-Public instruction, B"Lore

9.7 MAJOR ACCIDENT HAZARDOUS (MHA) UNITS AT BENGALURU RURAL DISTRICT

The following are the Major Accident Hazardous Factories located at four Industrial Zones. The following MAH information is provided by Factories and Boilers, the figures and facts are reproduced as per Factories and Boilers submission as on Oct 2015.

ZONE – I : Doddaballapur Industrial Zone

Sl. No	Name and Address of the Factory	Activity	Chemicals Stored/ Handled	Max Capacity	No. of workers
1	M/s Rittal India Pvt., Ltd. KIADB, Doddaballapur.	Storing and Handling of LPG	LPG	20MT	450
2	M/s Tata Steel ltd, C-28, KIADB Industrial Area, Doddaballapur	Bead wires	LPG	36MT	100
3	M/s Musashi Auto Parts India Pvt. Ltd. Raghunatha pura, Doddaballapur Indl. Area.	Mfg of Transmission parts for two wheeler and Four wheeler	LPG	20 MT	480

9.7.1 RITTAL INDIA PRIVATE LIMITED

1. Address and Location:

Rittal India Private Limited,

23 & 24, KIADB Industrial Area, Veerapur, Doddaballapur,

Banglore Rural Districtv - 561 203

35 Kms from Bengaluru City

2. Activities:

The manufacturing activity of the Plant is making of Electrical Panel Boards – enclosures.

3. Number of persons working:

The Plant works in a three shift from 6 am to 2 pm, 2 pm-10 pm and 10 pm- 6 am. on all weekdays and Sunday is weekly holiday.

Regular employees - 600

Average No. Of visitors – 25 to 30/ day.

5. Information of important contact persons in the factory;

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res.)	Residential Address
1	Prasanna Kumar, GM Operation	33720700	934251187	#85, Lakshmi nilaya, Shetti halli road, K.G halli, 1st cross, Raghavendra Layout, Blore- 15
2	C.K.Sundaramurthy, Safety Officer	33720879	9342016473	#2743, 12th main, E block, Rajajinagar 2nd Stage, Blore-10.

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	20 MT
Type of Storage	:	2 Bullets above ground (10MT each)
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks

Products handled are highly inflammable. The risks are Fire and Explosion.

The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population likely to be affected due to Thermal Radiation
1.	37.5	110	100% lethality	24
2.	12.5	225	1% lethality	160
3.	4.5	375	First degree Burns	160

7. Facilities available at plant.

Water Tanks : 200KL No.

Water Replenishment Resources : Private Tankers

Fire Pumps with diesel driven : 1 Nos.

Jockey pump : 1 No.

Fire Hydrant Points : 16 Nos.

Fire Water Hoses : 4 Nos.

Explosi Meter : 1 No.

Fire Monitor : 1 No.

D G Sets : 125 KVA – 1 No.

Personal Protective Equipment : Safety Helmet, Rubber hands gloves, First Aid Box, Safety Torches/

Fire Proximity Suit : 2 Nos.

Sprinkler system for LPG tanks : Yes

Fire Extinguishers : 10 Kg DCP Extinguishers= 20 Nos., Sand Scoops = 1 No.

Gas Leakage Detector : 8 Nos.

Smoke detectors : 40 Nos.

Call points : Two

8. Nearby town ship/village : Industrial Units located surrounding to the factory.

- Majara Hosahalli
- Veerapura
- Chikka Tumakur
- Doddaballapur 8 Kms.

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9.7.2 TATA STEEL LIMITED

1. Address and Location:

Tata Steel Ltd.,

28C, KIADB Industrial Area, Doddaballapur - 561203

35 Kms from Bengaluru City

2. Activities:

Manufacturing of tyre bead wires

3. Number of persons working:

The Plant works on three-shift basis on all weekdays and Sunday is weekly holiday.

Regular employees – 190

Average No. of visitors - 10 / day.

4. Information of important persons in the factory.

Sl. No.	Name/Designation	Phone (Off)	Phone (Res.)	Residential Address
1	Sanjeev Kumar Singh, Senior Manage Operations (Plant Head)	Mob: 0741100628 Off: 08119-329754	080-22193738	#8203, Omara Building, Prestige Monte Carlo, Yelahanka, Bengaluru - 560064
2	Srinivas Shenoy, Manager Maintenance	Mob: 09342701247	080-23336358	C/O R. Malini, # 67, Dena Bank Colony, 2nd Main, 3rd Cross, Gangenahalli, Bengaluru-560032

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	36 MT
Type of Storage	:	2 Horizontal Bullet above ground
State	:	Liquid
Hazard Involved	:	Fire/Explosion/Bleve

6. Risk assessments and types of risks

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effects	Population likely to be affected due to Thermal Radiation
1.	37.5	100 meter	100% lethality	62
2.	12.5	150 meter	1% lethality	10
3.	4.5	250 meter	3rd degree burns	145

6. Facilities available at plant.

Water Tanks : 3 Nos. of 6 Lakh gallons capacity each.
Water Replenishment Resources : Tanker Water
Fire Pumps : 2 Nos.
Fire Hydrant Points : 6 Nos.
Fire Water Hoses : 12 Nos.
Explosi Meter : 1 Nos.
Fire Monitors : 2 Nos.
D G Sets : 1125 KVA.
Personal Protective Equipment : Safety Helmet, Rubber hands gloves, First Aid Box, Fire Suits.
Sprinkler system for LPG tanks : Yes.
Electric Siren : Yes
Fire Extinguishers : DCP Extinguishers = 16 Nos, Water Co_2- 4, Sand Scoops = 11 Nos, Foam-10
LPG Gas leakage Detectors : 5 Nos
Fire Call Points : 4 Nos

7. Near by town ship.

Doddaballapur. : 5Kms

9.7.3 MUSASHI AUTO PARTS INDIA PVT LTD

1. Address and Location:

MUSASHI AUTO PARTS INDIA PVT LTD

#52-56, 61&62, Raghunatha pura Village,

Doddaballapura Indl.area,

Bengaluru Rural Dist : 561 203

38 Kms from Bengaluru City. 4Kms Off: Bengaluru Doddaballapura Road.

2. Activities:

Manufacture of Transmission Parts for 2 wheeler / 4 Wheeler.

3. Number of persons working

The factory works on all three-shift on all weekdays and Sunday is weekly holiday for Staff.

Regular employees -- 480

Average No. of visitors - 15 / day.

4. Information of important persons in the factory

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	Kenji Morisaki Director		9996699029	#VF602, 6th Floor, Poor Vaneezia, Yelahanka New Town, Bengaluru- 64
2	Venkateshwarulu M		9632786781	#B202, Nagarjuna Asterpart,Yelahanka New Town, Bengaluru- 64
3	Selvam, HOD.Engg		9632786784	#108, KHB high rise apartment, 15th A cross, A sector, Bengaluru- 64

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	20 MT
Type of Storage	:	2 Mounded Bullets
State	:	Liquid
Hazard Involved	:	Fire/Explosion

6. Risk assessment and types of risks

- The Plant handles LPG, which is highly inflammable and explosive. The hazards involved in the plant are
- Large scale release of LPG from bulk storage system, leading to dispersion, fire, explosion
- Leakage of LPG in unloading area due to unloading arm failure.
- Equipment failure / malfunction like relief valve failure, flange gasket failure, pumps mechanical seal failure etc. resulting in leakage of gas to atmosphere.
- Accidents due to over filled cylinders or fire in the vicinity.
- Lack of adequate fire protection facilities available at different places at plant facilities.
- Experience level of personal involved and their capacity to cope with emergency situation.
- Apart from the above, accidents due to mal operation, negligence and sabotage are also not ruled out.

Hazard and Scenarios : Severity zone/ Effecting area/ vulnerable population;

Jet Fire due to Bullet Leak from Joints/pipelines

Sl. No.	Thermal Radiation Flux KW/ Sq.m	Distance in Meters	Effects	Population affected due to Thermal Radiation
1	37.5	160	100% lethality	10
2	12.5	300	1% lethality	10
3	4.5	500	First degree Burns	10

7. Facilities available at plant

Water Storage	: Total 450KL
Water Replenishment Resources	: 1 Bore wells.
Fire Pumps with Diesel driven	: 1 No.
Jockey Pump	: 1 No.
Fire Hydrant Double	: 8 Nos.
Personal Protective Equipment	: Safety Helmets, Rubber Hand Gloves, Safety Shoes, First Aid Box,
Sprinkler system on tanks	: Provided
Fire Extinguishers	: a. 10 Kg DCP Extinguishers = 1 No b. CO2 Extinguishers 9 Kg = 1 No
Gas detectors fixed	: 04 Nos.

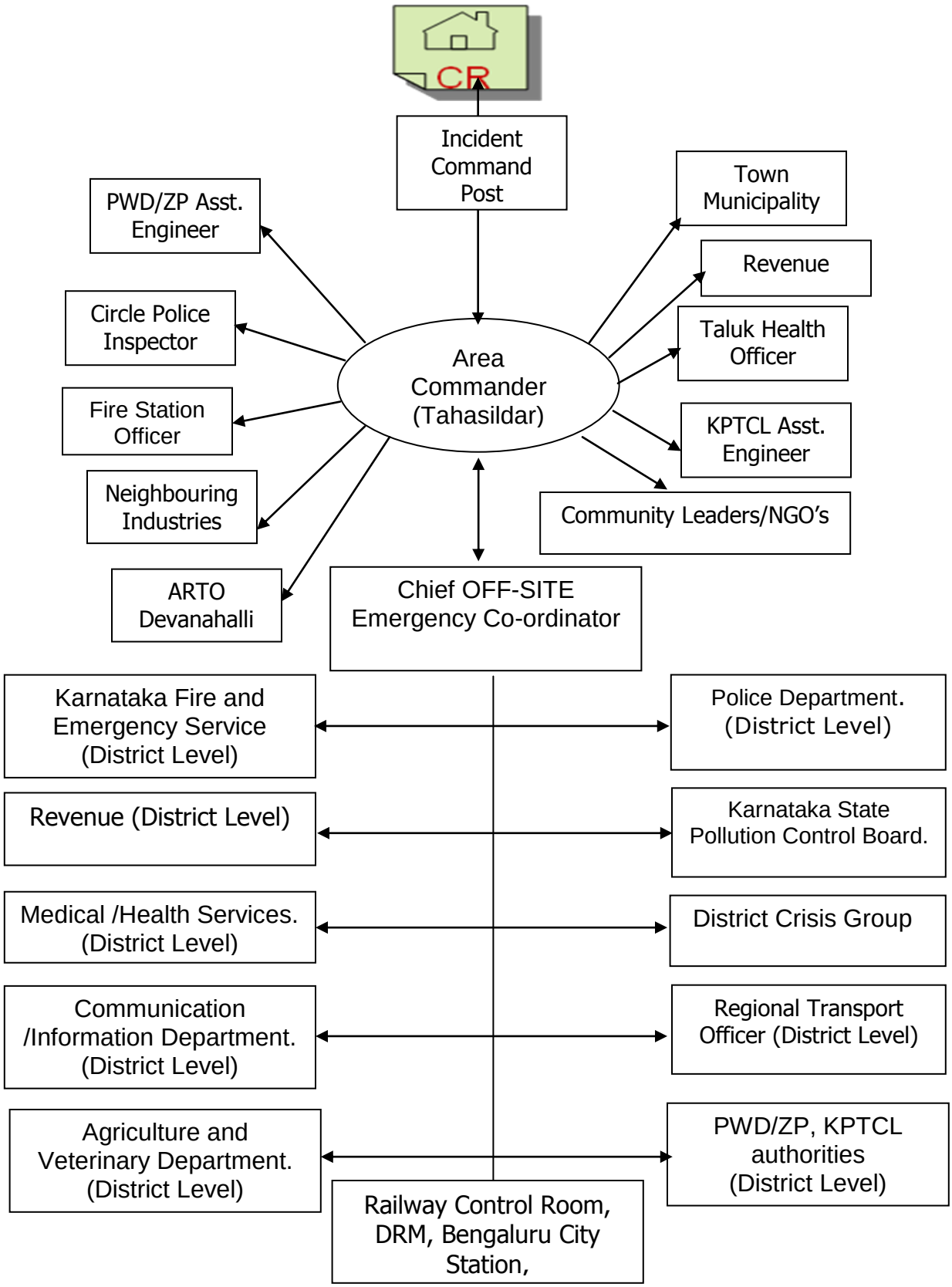
8. Near by town ship.

Raghunatha pura – 1 Km North West

Rashi Town ship – 0.5 Km West.

OFF-SITE EMERGENCY COMMUNICATION NETWORK

Doddaballpur Taluka.



IMPORTANT TELEPHONE NUMBERS OF THE RESPONDERS

Doddaballapur Taluk

Sl No.	Responders	Phone Office	Mobile
1	Tahasildar	7622002	9448017433
2	Circle Inspector of Police	7622025	
3	Fire Station Officer	7630101/7630628	
4	Taluka Medical Officer	7627174	
5	RTO connected to Doddaballapur	7681999	
6	Asst. Engineer PWD/ZP		
7	Asst. Executive Engineer KPTCL	7622118	
8	Town Municipal Commissioner/Officer	7405846	
9	Community Leaders/NGO's		
10	Railway Control, DRM, Bengaluru	22876410	
11	Neighboring Industries		
	1.Himmatsingka Seide Limited, 23/A KIADB Industrial Area,	7623554	
	2.ITC Limited, Meenakunte Village, Jala Hobli, Bengaluru North Taluk	28093016	
	3.Tractor and Farm Equipments Limited, KIADB, Doddaballapura	9448470803	
	4.Indo US Mimtek India Private Limited, Doddaballapur,	080-22048600	
	5. Silver Spark, KIADB Industrial Area, Doddaballapur.	080-67899000	

ZONE – II : Nelamangala Industrial Zone

Sl. No	Name and Address of the Factory	Activities	Chemicals Stored/ Handled	Max Capacity	No. of workers
1	Asia LPG Pvt Ltd. Budhihal village.	Bottling of LPG	LPG	100MT	25
2	Jyothi Gas Pvt Ltd N0:73/1, Kachanahalli.	Bottling of LPG	LPG	100MT	30
3	Indo Gas No;49/2, Jakkanahalli.	Bottling of LPG	LPG	70MT	50
4	Total Oil India Pvt. Ltd. Yelechegere, Nelamangla	Bottling of LPG	LPG	450 MT	20
5	Sree Surya Gas Corporation. No.44,45,46, Geddalahalli, Nelamangala	Bottling of LPG	LPG	40MT	10
6	Sneha Petroleum, Kottanahalli, Nelamangala.	Bottling of LPG	LPG	70MT	10
7	M/s Jindal Alluminium Ltd. Dabaspet, Nelamangala Taluk.	Mfg of Alluminium Foils Sheets	LPG	50 MT	370

9.7.4 ASIA LPG PRIVATE LIMITED

1. Address and Location:

124/1, Budhihal Village, Nelamangala (Tq), Banglore Rural District - 562 123

(36 Kms from Bengaluru City, 10 Kms from Nelamangala)

2. Activities:

The main activities of the Plant are receipt, storage, bottling and distribution of LPG.

3. Number of persons working:

The plant works in a single shift from 8.30 a.m. to 5 p.m. on all weekdays and Sunday is weekly holiday.

Regular employees – 13 : Proposed employees - 50

Average No. of visitors - 4 / day

4. Information of important persons in the factory.

Sl. No.	Name / Designation	Phone (Off)	Phone (Res.)	Residential Address
1	Raviraj Shetty, Plant Manager, Email : asialpg@rediffmail.com	9880023250	080-27730060	Grishma Nilaya, 5th Cross, Subhashnagar, Nelamangala. Bengaluru Rural District.
2	Manohar, Occupier	040-27904545	080-27730060	Venus Plaza, Begumpete, Hyderabad - 16

5. Brief Description of hazardous materials stored /handled

Name of the Product	:	LPG
Storage	:	100 T
Type of Storage	:	2 Bullets above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	190	100% lethality	35
2	12.5	365	1% lethality	150
3	4.5	625	First degree Burns	200

7. Facilities available at the plant

Water Tanks	: Total 480 KL
Water Replenishment Resources	: 1 Bore well
Fire Pumps	: 2 No. Of capacity
Fire Hydrant Points	: 6 Nos.
Jockey Pump	: 1 No.
Jet Nozzles	: 6 Nos.
Explosi Meter	: 1 No.
D G Sets	: 50 KVA, 62.5 KVA
Personnel Protection	: Safety Shoes, Har Helmet, Hand Gloves, Ear Muff.
Sprinkler system for MS tanks	: 110 nozzles/tank 92 Nozzles in un-loading area.
Fire Extinguishers	: 10 Kg DCP Extinguishers = 10 Nos. 50 Kg DCP (Manual) = 2 Nos. CO2 cartridges for 10 Kg DCP = 2Nos. CO2 Extinguishers = 15 Nos.

8. Near by town ship.

- Boodihal village - 1 Kms. south
- Eyeremenelahally – 1.5 Km.
- T Begur – 2 Km. North

9.7.5 JYOTHI GAS LTD

1. Address and Location:

73/1, Kachanahally, Budhihal Post, Nelamangala (Tq),

Bengaluru Rural Dist.– 562 123

35 Kms from Bengaluru City and 1.1 Km. Off: Bengaluru-Poona Highway

2. Activities:

The main activities are receipt, storage and distribution of LPG.

3. Number of persons working:

The factory works on a single shift basis from 8.30 a.m. to 5 p.m. on all weekdays and Sunday is weekly holiday.

Regular employees – 25

Average No. of visitors - 5 / day.

4. Information of important contact persons in the factory;

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	Mr. Prakash M Plant Manager	080-27730409	9686861294	#187, 4th cross, 1st Main, Venkatappa Colony, Dooravani nagar, Bengaluru- 560 016
2	Mr. Lokesh Safety Officer	080-27730409	9686861292	#73/1, Kachanahalli Village, Budhihal Post, Nelamangala Taluk, Bengaluru rural Dist.- 562 123.

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	100 MT
Type of Storage	:	4 x Horizontal Bullets above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	160	100% lethality	25
2	12.5	310	1% lethality	50
3	4.5	490	Third degree Burns	50

7. Facilities available at plant.

Water Tanks : 2 Nos. of water tanks of capacity 5.85 Lakh Liters

Water Replenishment Resources : 2 borewell with the yield of 400 Gallons per Hour

Fire Pumps : 2 No. Of capacity 171m^3/hour connected with diesel engine

Jockey Pump : 1 x 10 m^3/hr

Fire Hydrant Points : 7 Nos.

Fire Water Monitors : 4 Nos.

Jet Nozzles : 3 Nos.

Fire Monitors : 1 No.

D G Set : 45 KVA

Personnel Protection : Safety Helmets, Rubber hand gloves, First Aid Box,

Sprinkler system for LPG tanks : Yes

Manual Siren : Yes

Fire Extinguishers	: 10 Kg DCP Extinguishers = 14 Nos.
	50 Kg DCP (Manual) = 1 No.
	03Kg Co2 = 2 Nos.
	Sand Scoops = 2 Nos.
LPG Gas Leakage Sensors	: 6 Nos.

8. Near by town ships.

- Kachanahally - 1.0 Kms
- Machonayakanahally – 1.5 Km,
- Budhihal – 2 Km.

9.7.6 INDO GAS

1. Address and Location:

INDO GAS

49/2, Jakkanahally, Thyamagondlu,

Nelamangala (Tq), Bengaluru Rural Dist.– 562 123

26 Kms from Bengaluru City and 8 Km. off from Bengaluru-Poona Highway

2. Activities:

The main activities are receipt, storage and distribution of LPG.

3. Number of persons working:

The factory works on a single shift basis from 8.30 a.m. to 5 p.m. on all weekdays and Sunday is weekly holiday.

Regular employees – 25

Average No. of visitors - 9 / day

4. Information of important persons in the factory.

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	Dinakara Rao Kulkarni, Plant Manager.	080-23382258, 23409883	9844522993	#244, Bhavani Nilaya, Near Rathan School, Vish washanthi nagar, Bhaktanapaly road, Nelamangala, Bengaluru Rural Dist -562123
2	B. Prakash, Safety Officer	080-23382258, 23409883	9844247270	C/o Ramesh, Gangadhareshwara Nilaya, Puttiyana Palya, Thippe anjaneya temple road, Adepethe, Nelamangala.

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	20 MT + 50 MT
Type of Storage	:	3 Bullets above ground (10 MT each) + 50MT
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	110	100% lethality	10
2	12.5	225	1% lethality	10
3	4.5	375	First degree Burns	20

6. Facilities available at plant;

Water Tanks	: 1 No. of 5.5 Lakh Liters
Water Replenishment Resources	: 1 x 400 Gallons / hr. Bore well
Fire Pumps with Diesel Driven	: 2 Nos. of 17 m3/hr.
Fire Hydrant Points	: 6 Nos.
Fire Water Hoses	: 6 Nos.
Explosive Meter	: 1 No.
D G Set	: 25 KVA + 63 KVA
Personnel Protection	: Safety Helmets, Rubber hand gloves, First Aid

Box, Safety Torches and Breathing Mask.

Sprinkler system for LPG tanks : Yes

Manual Siren : Yes

Fire Extinguishers : 10 Kg DCP Extinguishers = 10 Nos.
Foam type and Co_2 = 4 Nos.

Smoke detectors : 2 Nos.

8. Near by town ship.

Jakkanahally - 2 Kms

Varadanayakanahalli - 2 Kms

Hasiruvalli - 2.5 Kms

Baradi - 1.5 Kms

9.7.7 TOTAL OIL INDIA PVT. LTD.

1. Address and Location:

Sy. No. 135, Yelachegere Village,

Nelamangala, Banglore - 562 123.

26 Kms from Bengaluru City, 2.2 Kms off: Bengaluru-Poona Highway.

2. Activities:

The main activities of the plant are receipt, storage, bottling and distribution of LPG.

3. Number of persons working:

The Plant works on a single shift basis from 9.30 a.m. to 5.30 p.m. on all weekdays and Sunday is weekly holiday.

Regular employees - 10

Average No. Of visitors - 5 / day.

4. Information of important persons in the factory.

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res.)	Residential Address
1	Mr. Rajashekar Plant Manager	080-27700300	8105586557	# 79, 15th main road, Muneshwara block, BSK 3rd stage, Bengaluru-25.
2	Mr. Raghuram Safety Officer	080-27700300	7259547374	#105, Sapthagiri comforts Apartments, near Siddalingeshwara theator, Bengaluru-83.

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	450 MT
Type of Storage	:	3 x Horizontal Bullet above ground
State	:	Liquid
Hazard Involved	:	Fire/Explosion/Bleve

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	168	100% lethality	10
2	12.5	325	1% lethality	10
3	4.5	550	First degree Burns	05

7. Facilities available at plant

Water Tanks : 2 Nos. of 380 KL capacity each.

Water Replenishment Resources : 2 Borewell with the yield of 400 Gallons/Hour.

Fire Pumps with Diesel Driven : 2 Nos. of 171m3/hr capacities each.

Jockey Pump : 1 x 10m3/hr

Fire Hydrant Double : 5 Nos.

Fixed Water Monitors : 9 Nos.

D G Sets : 45 KVA.

Personal Protective Equipment : Safety Helmet, Safety shoes, Rubber hands gloves, First Aid Box, Ear Muffs,

Fire proximity Suit : 04 Nos.

Sprinkler system for LPG tanks : Sprinkler system in all the Operating area.

Manual Siren : Yes

Fire Extinguishers : 10 Kg DCP Extinguishers = 33 Nos.
75 Kg DCP Extinguishers = 02 Nos.
4.5 Kg Co2 Extinguishers = 04 Nos.
9 Kg Co2 Extinguishers = 02 Nos.
Sand Scoops = 8 Nos.

LPG Gas leakage detectors : 13 Nos.

Portable Gas Detector : 1 No.

Smoke Detectors : 08 Nos.

8. Near by town/villages

- Obanayakana Hally – 1 Km East
- Yelachagere – 1 Km South
- Hajipalya – 1.5Kms South West
- Gandaragalipura – 1.5 Kms North

9.7.8 SREE SURYA GAS

1. Address and Location:

#44, 45, Geddalahally

Nelamangala, Banglore Rural District - 562 123.

38 Kms from Bengaluru City

2. Activities:

The main activities of the Plant are receipt, storage and distribution of LPG.

3. Number of persons working

The depot works on a two shift basis from 6.00 a.m. to 2.00 pm and 2:00pm to 10:00 pm, on all weekdays and Sunday is weekly holiday.

Regular employees - 13

Average No. of visitors - 9 / day

4. Information of important persons in the factory

Sl. No.	Name/ Designation	Phone (O)	Phone (Res)	Residential Address
1	Gujjarappa, Plant Manager	22440067	7760287567	#192, Ammaji Nilaya, Marathi Layout, Nelamangala, Blore Rural
2	Ganesh Safety Officer	22440067	9448606373	4/2, 15th Cr. Pipeline Road, Choluru Palya, Magadi Rd., Bengaluru-23

5. Brief description of hazardous materials stored / handled

Name of the Product	:	LPG
Storage	:	42 MT
Type of Storage	:	2 Bullets above ground (28 MT + 14 MT)
State	:	Liquid
Hazard Involved	:	Fire/Explosion

6. Risk assessments and types of risks

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	160	100% lethality	10
2	12.5	300	1% lethality	10
3	4.5	500	First degree Burns	10

7. Facilities available at plant

Water Tanks	: Total 200 KL
Water Replenishment Resources	: 2 Bore wells
Fire Pumps	: 1 No. of capacity 171 m3 per Hour.
Fire Hydrant Points	: 3 Nos.
Fire Water Hoses	: 3 Nos.
Explosi Meter	: 1 No.
D G Sets	: 50 KVA
Personal Protective Equipment	: Safety Helmets, Rubber Hand Gloves, First Aid Box,
Sprinkler system on tanks	: Provided
Electrical Siren	: Yes
Manual Siren	: Not available
Fire Extinguishers	: 10 Kg DCP Extinguishers=10 Nos. CO2 Extinguishers 9 Kg=1 No.

8. Near by township;

Yelachegere	– 1 Km South.
Hajipalya	– 1.5 Kms South West.
Obdnayakanahalli	– 1 Km East.
Gandragalipura	– 1.5 Kms North.

9.7.9 SNEHA PETROLEUM

1. Address and Location:

Kottanahally, Nelamangala,

Banglore-562 123.

34 Kms from Bengaluru City

2. Activities:

The main activities of the Plant are receipt, storage, Bottling and distribution of LPG.

3. Number of persons working:

The depot works on a single shift basis from 10 a.m. to 6 p.m. on all weekdays and Sunday is weekly holiday.

Regular employees -- 06

Contract worker --08

Average No. Of visitors - 5 / day.

4. Information of important persons in the factory

Sl. No.	Name/Designation	Phone (Off)	Phone (Res.)	Residential Address
1	Sri.Bharath Plant Manager	8880480107	8880480107	15/47, 1st Main, 47 A cross, 8th Block, Jayanagar, Bengaluru-82.
2	Sri.Milind Ingle, Deputy General Manager	9372201819	9372201819	

5. Brief Description of hazardous materials stored /handled

Name of the Product	:	LPG
Storage	:	70 MT
Type of Storage	:	3 Bullets above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1.	37.5	143	100% lethality	10
2.	12.5	275	1% lethality	10
3.	4.5	460	First degree Burns	10

7. Facilities available at plant;

Water Tanks	: Total 300 K Ltrs.
Water Replenishment Resources	: 1 Bore well.
Fire Pumps	: 2 Nos. of capacity 171m^3 per Hour.
Fire Hydrant Points	: 6 Nos.
Fire Water Hoses	: 4 Nos.
D G Sets	: 40 KW.
Personnel Protection	: Safety Helmets, Rubber Hand Gloves, First Aid Box
Sprinkler system for LPG tanks	: 50 nozzles/tank
Electrical Siren	: Yes
Manual Siren	: Yes
Fire Extinguishers	: 10 Kg DCP Extinguishers = 8 Nos.
	CO2 Extinguishers 9 Kg = 1 No.

8. Near by town / village : Kottanahally village

9.7.10 JINDAL ALUMINIUM LIMITED (Rolling mill Division)

1. Address and Location:

KIADB Indl.area, Sompura, Dabaspet,

Bengaluru- 562 111

52 Kms from Bengaluru City

2. Activities:

Manufacturing of Aluminium Foils Sheets.

3. Number of persons working:

The depot works on all Three shift on all weekdays.

Regular employees	–	300 (in all Three shifts)
Contract Workers	-	70 (in all Three shifts)
Average No. Of visitors	-	20 / day

4. Information of important persons in the factory.

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res.)	Residential Address
1	S.K. Jain, Manager	9611195400 skjain@jindalaluminium.com	080-23715556	Jindal Aluminium Staff Quarters, Jindal Nagar, Tumkur road, Blore-73.
2	K.R Raghunath, Occupier	080-23715555	080-23715555	Jindal Aluminium Staff Quarters, Jindal Nagar, Tumkur road, Bengaluru
3	Varaprasada Bangaru, Safety Officer	9900073376	9900073376	Jindal Aluminium Staff Quarters, Jindal Nagar, Tumkur road, Bengaluru

5. Brief Description of hazardous materials stored /Handled:

Name of the Product	:	LPG
Storage	:	25 x 2 MT = 50 MT
Type of Storage	:	2 Bullets above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Product handled is highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation Flux KW/ Sq.m	Distance in Meters	Effects	Population affected due to Thermal Radiation
1.	37.5	143	100% lethality	10
2.	12.5	275	1% lethality	10
3.	4.5	460	First degree Burns	10

7. Facilities available at plant:

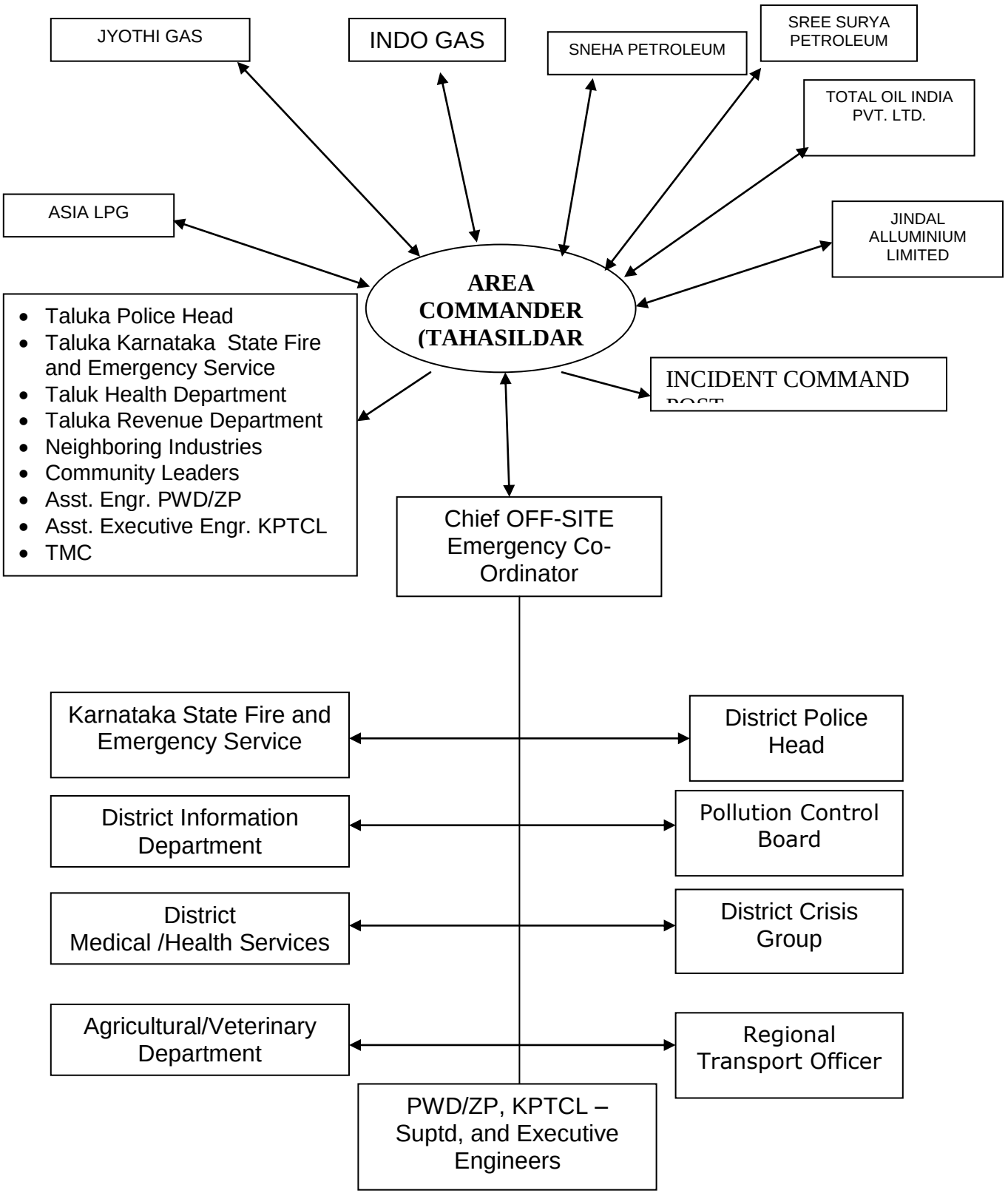
Water Tanks	: Total 8 lakhs Ltrs.
Water Replenishment Resources	: 3 Bore well.
Fire Pumps	: 2 Nos.
Jockey Pump	: 2 Nos.
Fire Hydrant Points	: 64 Nos.
Fire Water Hoses	: 128 Nos. (15 meters)
D G Sets	: 163 HP.
Personal Protection	: Safety Helmets, Rubber Hand Gloves, First Aid Box,SCBA, Face shield.
Sprinkler system for LPG tanks	: Yes
Electrical Siren	: Yes
Manual Siren	: Yes
Portable Jet Foam	: 1 No.

Fire Extinguishers : 1. DCP Extinguishers= 76 Nos.
(of 2Kg, 5 Kg, 6Kg, 9 Kg, 10 Kg)
2. CO2 Extinguishers =53 Nos.
(2Kg, 4.5 Kg, 6.5 Kg, 22.5 Kg)
Mechanical Foam 9 ltrs = 3 Nos.
50 ltrs = 2 Nos.

8. Near by town ship: Yedehalli and Bharathipura.

OFF-SITE EMERGENCY COMMUNICATION NETWORK

NELAMANGALA TALUK



IMPORTANT TELEPHONE NUMBERS OF THE RESPONDERS

(Nelamangala Taluka)

Sl No.	Responders	Phone Office	Mobile
1	Tahasildar	90369 06776	
2	Circle Inspector of Police	7726260	
3	Fire Station Officer	7726570	
4	Taluka Medical Officer	7722557	
5	RTO, Nelamangala	7726886	
6	Asst. Executive Engineer PWD/ZP	7722147	
7	Asst. Executive Engineer KPTCL	7725833	
8	Town Municipal Commissioner/Officer	7725085	
9	Community Leaders/NGO's		
10	Neighboring Industries 1. Kenna Metal India Limited, 8/9th Mile, Tumkur Road, Bengaluru. 2 Himalaya Drug Company, Makali, Nelamangala Road, Bengaluru. 3. LM Wind blades India Private Limited, Dabaspet, Nelamangala Taluk. 4.TD Power Systems Private Limited, Dabaspet, Nelamangala Taluka	 28394321 9980800025 9886192641 9741488244	

ZONE 3: Hoskote Industrial Zone

Sl. No	Name and Address of the Factory	Activities	Chemicals Stored/ Handled	Max Capacity	No. of workers
1	BPCL Limited Devanagonthi, Hosakote.	Storing & Distribution	Petroleum Products	53800KL	75
2	HPCL Limited Devanagonthi, Hosakote.	Storing & Distribution	Petroleum Products	54250KL	75
3	IOCL Limited Devanagonthi, Hosakote.	Storing & Distribution	petroleum Products	76000KL	150
4	IOCL LPG Bottling Plant, Devanagonthi, Hosakote.	Bottling of LPG	LPG	3150 T	300
5	Orient Bell Ltd, Hoskote Industrial Area	Storing & handling Of LPG	LPG	100 T	300

9.7.11 BHARAT PETROLEUM CORPORATION LIMITED

1. **Address and location**

   Bharat Petroleum Corporation Limited

   Devangonthi Installation

   Near Devanagonthi Railway station,

   Hoskote taluk, Bengaluru – 560067

2. **Activities**

   The main activities of the installation are receipt, Storage and Distribution of petroleum products like Unleaded Petrol, Diesel, Kerosene, Furnace Oil, Light Diesel Oil and special products like SBP, MTO, and Ethanol.

3. **No of persons Working**

   Regular Employees : 40

   Temporary Employees : 55

   Visitors : 50 per day

Shift Timings : Three Shifts

General Shift : 0800 Hrs to 1630 Hrs

First Shift : 0630 Hrs to 1430 Hrs

Second Shift : 1430 Hrs to 2230 Hrs

Note : Product receipt operation is carried on in 3 shifts.

4. Information On Important Persons In Factory:

Sl. No.	Name/Designation	Phone (O)	Phone (Res.)	Residential Address
1	Rajeev Kumar, Territory Manager	22975455	9448990901	No. 305, Sobha Saphire Apartments, Amruthahalli, B'lore
2	Shaji H Sr. Installation Manager, Devanagonthi,	27945759	94489 90907 25847728	1024, Shobha Carnation, Greenglen Layout, ORR Belandur, Bengaluru-560 103

5. Brief Description of HAZARDOUS MATERIAL Stored / Processed

Name of the Products : MS, HSD, SKO, ATF, ETHANOL, FO, MTO SPEED/HI SPEED ADDITIVES,

Storage Capacity : Class A – 17775 KL,
Class B - 36178 KL
Class C – 488 KL

Type of Storage : A/G Tanks - Fixed and Floating roof tanks
U/G Tanks

Hazards Anticipated : 1. Tank lorry fire due to static charges
2. Tank lorry fire due to improper spark arrestor
3. Pipeline leak due to rupture
4. Storage tank fire
5. Storage tank leak due to corrosion/overflow

6. Risk Assessment And Types Of Risk

Products handled are highly inflammable. The risks are Fire. The Risks analysis is based on the probable worst-case scenario, which is due to leakage of petroleum products resulting in fire that

could occur in the plant. Its effects are most devastating due to flame contact and thermal radiation.

Types of Risk
a) Fire
b) Explosion
c) Chemical Spills

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1.	37.5	24	100% lethality	5
2.	12.5	40	1% lethality	5
3.	4.5	93	Third Degree burns	15
4	1.6	106	First Degree burns	15

7. Facilities Available At The Plant

Water Tanks	:	1425Kl x 3 tanks + 4500 x 2
Water replenishment resource	:	Bore well 12KL/day+Rain Water Harvesting
Fire pumps	:	796KL/hour -5 nos.
Fire hydrant points	:	42nos
Firewater hoses	:	40 nos
Fire Monitors	:	32 nos.
Jet nozzles	:	8 nos.
Explosimeter	:	2 nos.
DG sets	:	3 nos.
Personal protective equipment	:	Helmets, CABA, fire proximity suit, Hand gloves, shoes
Sprinkler system	:	Provided for 6 floating roof tanks
Fire call points	:	7Nos.
Fire extinguishers	:	10kg DCP – 68 numbers 75kg DCP - 8 numbers Co_2 Extinguishers – 12 numbers
Manual Siren	:	6Nos.
Electric Siren	:	2 Nos
HVLRs Monitors (Remote Operated)	:	9 Nos (High Volume long Range)
Mobile HVLR trolley (2000 GPM)	:	1 Nos
Mobile HVLR Trolley (1000 GPM)	:	1 Nos
Fixed Foam System	:	Covers All Plant

MEFG (Medium Expansion Foam Generators) : 6 Nos (Fixed) + 2 Nos (Mobile)

8. List of First Aid Equipments Available

1	Stretcher	1
2	First Aid Box with Anti Snake Serum	5
3	Resusciator	2
4	Water Jet Blankets	3
5	Emergency Kit	17 Items

9. Safe Assembly Point: Administration block

10. Control Room – Manager's Cabin and Control room

11. <u>Near by Villages and Population:</u>

Devangonthi Village - 1000
Devalapura - 670

9.7.12 HINDUSTAN PETROLEUM CORPORATION LIMITED

1. Address and Location:

Devanagonti depot, Devanagonti, Hosakote Taluk,

Bengaluru Rural District.

40 Kms from Bengaluru City

2. Activities:

The main activities of the Plant are receipt, storage and distribution of petroleum products viz., petrol, high-speed diesel, kerosene, kerosene, ethanol and ATF.

3. Number of persons working:

The depot works on a single shift basis from 8.30 am to 5 pm on weekdays and 8.30 am to 1.30 pm on Saturdays.

Note : Product receipt operation is carried on in 3 shifts.

- Regular employees – 26
- Contract worker - 30
- No. of visitors -- 25 / day which includes the tank truck crew coming for taking the products.

4. Information on important persons in the factory.

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	M.V. Mukundan , Chief Terminal Manager	080-27945117 9483505069	080-26422209	G201, Sterling Terrace Apartments,100 Ft Ring Road, BSK III Stage, Bengaluru-85
2	G. Divakar, Sr. Manager Operation	080-25953817 9449060011	080-23464628	15 Shyamala Apartments, 9th Main, 9th Cross, Malleswaram, Bengaluru-3

5. Brief Description of hazardous materials stored /Handled:

Name Of the Product: Motor Spirit (MS), High Speed diesel (HSD), Superior Kerosene (SKO), Aviation Turbine Fuel (ATF) & Ethanol

Storage :
1. MS=15042KL
2. HSD=49638KL
3. SKO=3937KL
4. ATF =10000KL
5. Ethanol=360KL

Type of Storage :
1. Floating Tank Vertical Tank
2. Conical fixed roof vertical Tank
3. Horizontal Tank
4. Under Ground

State : Liquid

Hazards Involved : Fire/Explosion

6. <u>Risk Assessment And Types Of Risk</u>

Products handled are highly inflammable. The risks are Fire and explosion. The Risks analysis is based on the probable worst-case scenario, which is due to leakage of petroleum products resulting in fire that could occur in the plant. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1.	37.5	24	100% lethality	5
2.	12.5	40	1% lethality	5
3.	4.5	92	First degree Burns	10

7. Facilities available at plant.

Water Tanks	: Total 3600KL (2Tanks)
Water Replenishment Resources	: 2 No. Bore well.
Fire Pumps	: 3 Nos. of 410 K Lt. Capacities each.
Fire Hydrant Points	: 33 Nos.
Fire Monitors	: 28 Nos.
D G Sets	: 4 Numbers.
Personal Protection	: Safety Helmets, Breathing Masks, Gas Mask canister for furfural doping, oxygen respirators, Fire proximity suit, SCBA, Gloves, Safety Goggles and Ear Plugs.
Sprinkler system for MS tanks	: 3 MS tanks have been provided with sprinklers
Electrical Siren	: Yes 2 numbers
Manual Siren	: Yes 3 numbers
Fire Extinguishers	: 1. 10 Kg DCP Extinguishers=107 Nos. 2. 25 Kg DCP = 26 Nos. 3. 75 Kg DCP Trolley = 4 Nos. 4. CO2 cartridges for 10 Kg DCP=20 Nos. 5. CO2 Extinguishers (4.5 Kgs) =14 Nos. 6. Total ABC 5 Kgs = 3 Nos. 7. Total ABC 1Kgs = 5 Nos.

Under mutual aid, fire hydrant system is connected to BPC and IOC system also.

8. Near by town ship :

	Distance		**Population**
Devanagonthi	1 Km	-	1000 nos.
Devalapur		.	600 nos.

9.7.13 INDIAN OIL Corp. Ltd. – Devanagonthi Terminal

1. Address and Location:

Devanagonthi Terminal, Hosakote Taluk,

Bengaluru Rural Dist.

40 Kms from Bengaluru City

2. Activities:

The main activities of the Plant are receipt, storage and distribution of petroleum products viz., petrol, high-speed diesel, kerosene, ATF, and Ethanol.

3. Number of persons working:

Regular workers : 75

Contract Employees : 75

Average No. of visitors - 70 / day.

4. Information on important persons in the factory;

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	M.Paduvaipathy, Dy.General Manager (Terminal)	080-27970444 9448289932	-	120,B-3,Sharavathy Block, National Games Village, Koramangala, Blore – 34.
2	P.K.Halder, Manager (Terminal)	080-27970445 9448286622	-	A3606,Sharavathy Block, National Games Village, Koramangala, Blore – 34.

5. Brief Description of hazardous materials stored /Handled:

Sl. No.	Name of the product	Storage Capacity
1.	Motor Spirit	20300KL
2.	High Speed Diesel	35000KL
3.	Superior Kerosene Oil	7008KL
4.	Aviation Turbine Fuel	14000KL
5.	Ethanol	600KL

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The Risks analysis is based on the probable worst case scenario, which is due to leakage of petroleum products resulting in fire that could occur in the plant. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	24	100% lethality	5
2	12.5	40	1% lethality	15
3	4.5	93	First degree Burns	60

7. Facilities available at plant.

Following is the list of facilities & equipment available inside the factory.

- Water tanks — 2 (2x 2950KL)
- Water replenishment resource — bore well
- Fire pump — 3 Nos. x 616 KL/Hr
- Fire hydrant points — 33
- Fire water hoses — 70
- Fire Monitors — 48
- Explosi meter — 01
- DG Sets — 05
- Personal protective equipment — Proximity suit, SCBA
- Fire Extinguishers — 10 kgs DCP- 143
  - 25 kgs DCP – 26
  - 75 kgs DCP – 18
  - Co_2 - 62
- Siren — 02 numbers (Electrical)
  05 (Manual)

8. Near by town/villages, population and distance

Devangonthi,	1000	1.5 kms
Devalapura,	600	2 kms

9.7.14 INDIAN OIL CORPORATION Ltd. : LPG BOTTLING PLANT

1. Address and Location:

Devanagonthi,

Hoskote Taluk, Banglore-67.

45 kms from Bengaluru city

2. Activities:

The main activities of the Plant are receipt, storage, bottling and distribution of LPG.

3. Number of persons working:

Regular Employees : 71

Temporary Employees : 165

Visitors : 85 per day on average

1st Shift Timings: 0600 Hrs - 1400 Hrs

2nd Shift Timings: 1400 Hrs -2200Hrs

General Shift: 8.30 AM - 17:00 Hrs

4. Information of important persons in the factory

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	P.R. Deodhar Chief Plant Manager, Occupier	080-27945550 9448289973	9448289973	A 602, Silver woods, C.V. Raman Nagar, Bengaluru
2	R. Thamarai Selvan, Manager (Plant), Factory Manager	080-27945258 9448281048	9448281048	H.A. Thottappa Building, Hegadur Colony, White Field, Bengaluru - 66

5. Brief Description of hazardous materials stored /handled

Name of the Product	:	LPG
Storage	:	3050 MT
Type of Storage	:	3 Bullets & 2 Horton Spheres above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion/Bleve/UVCE/JET fire

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	524	100% lethality	200
2	12.5	908	1% lethality	1200
3	4.5	1830	Third degree Burns	2700

7. Facilities available at plant.

- Water tanks — 11,100 KL (3700 KL x 3)
- Water replenishment source — Bore well 4 Nos.
- Fire pumps — 8 numbers (410 KL/hr)
- Fire Hydrant Points — 57 double headed hydrants
- Fire water hoses — 114 Fire hoses
- Fire monitors — 52
- Jet nozzles — 52
- Personal protective equipment — Fire proximity suit,

Low temperature suit,
SCBA, Water jet blankets

- DCP fire extinguisher 10-kg capacity 182 Nos.
- DCP fire extinguisher 75-kg capacity 10 Nos.
- Carbon dioxide fire extinguisher 5-kg capacity 13 Nos.
- Sand scoops 15 Nos.
- Safety helmets 90 Nos.
- Water curtain nozzles 4 Nos.
- Fire proximity suit without breathing apparatus 1 Nos
- Fire fighting hoses 15 m length 180 Nos
- LPG Detectors 72 Nos

8. List of first aid equipment available in the Installation:

1. Stretcher - 2 Nos.
2. First aid box with anti snake serum - 4 Nos.
3. Resuscitator - 2 Nos
4. Water jet blankets - 4 Nos.

Nearby town ship;

Village	Population
Kanekal	500
Kacharakanahalli	900
Devanagonthi	1000
Devalapura	600

9.7.15 ORIENT BELL LIMITED

1. Address and Location:

Chokkahally Village, Near Hosakote Ind. Area,

Hosakote, Bengaluru Rural Dist.

40 Kms. from Bengaluru City, Via Bengaluru-Chinthamani Road

2. Activities:

The manufacturing activity of the Plant is making of Ceramic Floor Tiles.

Number of persons working:

1st Shift – 97 Workers

2nd Shift – 85 Workers

3rd Shift – 82 Workers

General Shift – 84 Workers

Average No. Of visitors - 10 / day.

4. Information of important persons.

Sl. No.	Name	Phone (Off)	Phone (Res.)	Residential Address
1	Sri.K.M.Pai, Managing Director	080-27971571 98452 87257	080-22281966	533, Embassy Habitat, 59 Palace Road, Bengaluru-560052
2	Sri. Sandeep Baidya, General Manager	080-27971571 9742943648	080-25244618	001, Grand edifies, Near Toll Gate, Old Madras Road, Hoskote, Bengaluru.

5. Brief Description of hazardous material stored /Handled:

Name of the Product	:	LPG,
Storage	:	LPG – 50 MT
Type of Storage	:	1 Bullet above ground
State	:	Liquid
Hazards Involved	:	Fire/Explosion

6. Risk assessments and types of risks.

Products handled are highly inflammable. The risks are Fire and Explosion. The risk analysis is based on the probable worst case scenario is due to fire and explosion that could occur in the plant. The worst scenario (BLEVE – Boiling Liquid Expanding vapor Explosion) envisaged is the catastrophic failure of LPG bullets/spheres resulting in sudden loss of containment. It is due to injection of boiling superheated liquid that produces chain of reactions rupturing vessels causing rocket projection of bullet/sphere material. The released liquid flashes and atomized immediately, resulting in fireball. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Population affected due to Thermal Radiation
1	37.5	190	100% lethality	25
2	12.5	365	1% lethality	50
3	4.5	625	First degree Burns	150

7. Facilities available at plant.

Water Tanks : Yes 2 nos.
Water Replenishment Resources : Yes 3 nos.
Fire Pumps : 1 No.
Fire Hydrant Points : 5 Nos.
Fire Water Hoses : 8 Nos.
D G Sets : Yes
Personal Protective Equipment : Safety Helmet, Rubber hands gloves, First Aid, Box, Fire Suits.
Sprinkler system for LPG tanks : Yes
Electrical Siren : Yes
Manual Siren : Yes
Fire Extinguishers : DCP (10 Kg) = 1 No.
DCP (5 Kg) = 20 Nos.
CO2 (4.5 Kg) = 7 No.
CO2 (9 Kg) = 1 No.
CO2 (2 Kg) = 2 No.
LPG gas leakage detector : 1 No.

8. Safe Assembly point – Open field near Administrative Block

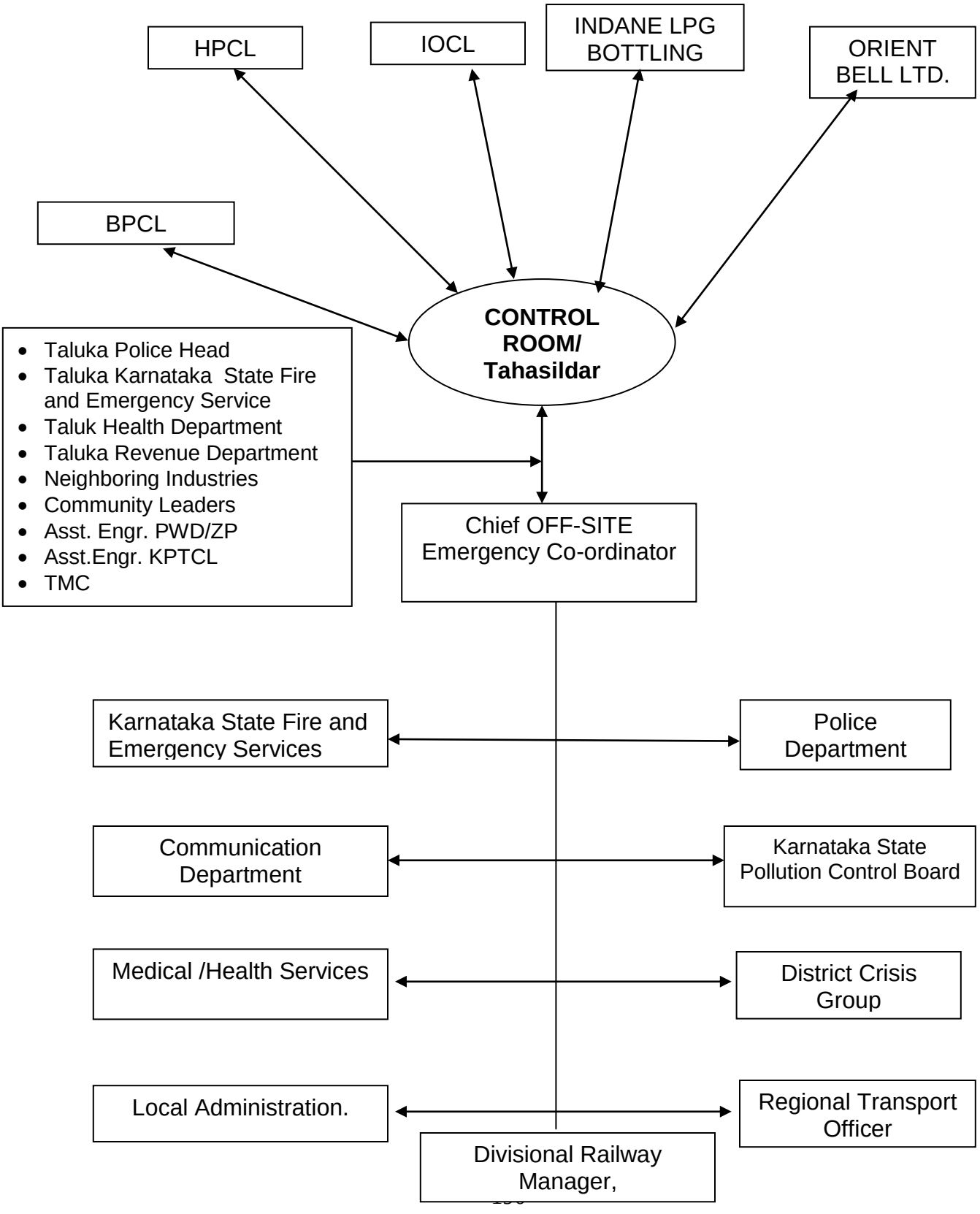
9. Control room – Security room & Sr. Manager (HR) Office

10. Near by Town / Village, Distance and Population

❖ Doddahulluru,	1.5 kms	1045
❖ Chikkahulluru,	2.0 kms	1480
❖ Chokkahalli	2.0 kms	1326
❖ Cholappanahalli,	2.5 kms	679
❖ Pilagumpe	2.5 kms	780

OFF-SITE EMERGENCY COMMUNICATION NETWORK

HOSAKOTE TALUKA



IMPORTANT TELEPHONE NUMBERS OF THE RESPONDERS

HOSAKOTE TALUKA

Sl No.	Responders	Phone Office	Mobile
1	Tahasildar	7932423 97422 69943	
2	Circle Inspector of Police	7931570	
3	Fire Station Officer	7905931	
4	Taluka Medical Officer	7905909	
5	RTO, KR Puram	25617951	
6	Asst. Engineer PWD/ZP	7931269	
7	Asst. Executive Engineer, BESCOM	7971350	
8	Town Municipal Commissioner/Officer	7900570	
9	Community Leaders/NGO's		
10	Devanagonthi Railway Station Incharge	080-22876410	
10	Neighbouring Industries 1.Volvo India Limited, Yelachahalli, Hoskote – Kolar Rod, Hosakote, 2. Volvo Buses Private Limited, Yelachahalli, Hoskote – Kolar road, Hosakote. 3.Akzo Nobel Coatings India Private Limited, Hosakote Industrial Area, Hosakote	97414 77388 9845221466 22895000	

ZONE 4 : Devanahalli

Sl. No	Name and Address of the Factory	Activities	Chemicals Stored/ Handled	Max Capacity	No. of workers
1	**INDIAN OIL SKY TANKING LIMITED** Fuel Farm Facility, Bengaluru International Facility, Devnahalli, Bengaluru – 560 030	Storing & Distribution of Aviation Turbine Fuel	Petroleum Products (ATF)	10010 KL	25

9.7.17 INDIAN OIL SKY TANKING LTD, DEVANAHALLI

1. Address and Location:

Fuel Farm Facility, Bengaluru International Airport

Devanahalli, Bengaluru – 560 300.

2. Activities:

The main activities of the Plant are receipt, storage and delivery of Aviation of Turbine Fuel.

3. Number of persons working:

Regular workers : 55
Average No. of visitors - 85 / day

4. Information on important persons in the factory

Sl. No.	Name/ Designation	Phone (Off)	Phone (Res)	Residential Address
1	V. Rangarajan, General Manager	080-66783203	9611773444	Block C8-534, 1st Floor, Kendriya vihar Apartments, Yelahanka.
2	Syed Mohammed Sajid, Safety Officer	080- 66783205	7760965318	Srimathi Lakshmi Nilaya, 2nd Floor, Flat no-005, Pilakamma nagar, Chikkajala Post, Bengaluru-562157

5. Brief Description of hazardous materials stored /Handled:

Sl. No.	Name of the product	Storage Capacity
1.	Jet A1 - Aviation turbine fuel	13310 KL

Type of Stoage : 4 x Conical roof vertical storage tanks
State : Liquid
Hazard Involved : Leak, Fire and Explosion

6. Risk assessments and types of risks

Products handled are highly inflammable. The risks are Fire and Explosion. The Risks analysis is based on the probable worst case scenario, which is due to leakage of petroleum products resulting in fire that could occur in the plant. Its effects are most devastating due to flame contact and thermal radiation.

Sl. No.	Thermal Radiation flux KW/ Sq.m	Distance in Meters	Effect	Populatin lightly to be affected due to Thermal radiation.
1	37.5	5.4	100% lethality	05
2	12.5	11.5	1% lethality	15
3	4.5	20.3	First degree Burns	20

7. Facilities available at plant

Following is the list of facilities & equipment available inside the factory.

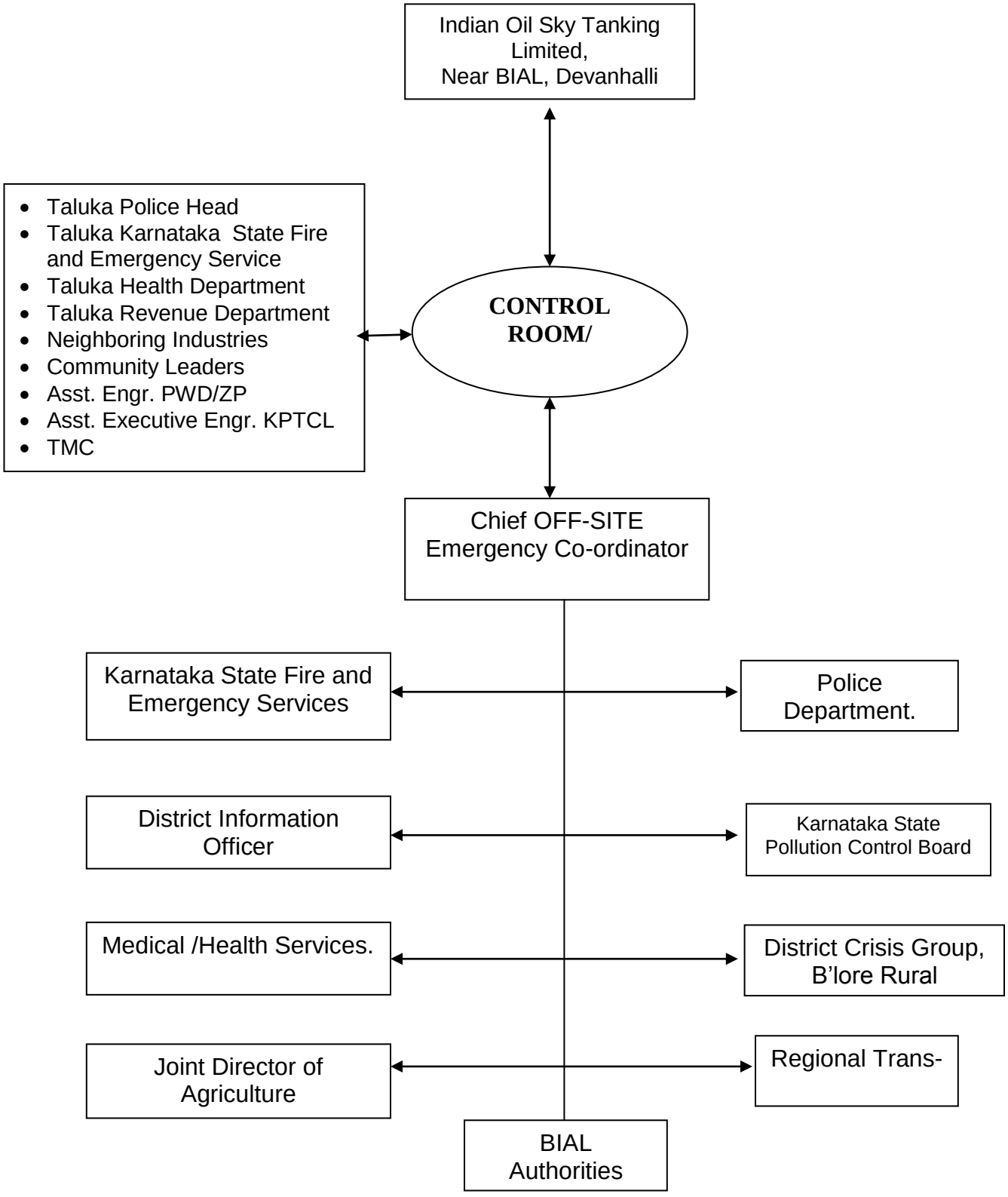
- Water tanks — 2 (2x 1140KL)
- Water replenishment resource — Supply from BIAL
- Foam Storage Tank — 1 x 4 KL
- Foam Barrels (200 ltrs) — 23 Nos.
- Fire pump — 3 x 275 m3/hr (auto mode)
- Jockey Pump — 1 x 16m3/hr (auto mode)
- Fire hydrant points — 24
- Fixed Water Foam Monitors — 03 Nos.
- Fire water hoses — 48
- Fire Monitors — 03
- Explosi meter — 01
- DG Sets — 01
- Personal protective equipment — Proximity suit, SCBA, Hard Helmet, Hand Gloves, Ear Muff, Safety Shoes
- Fire Extinguishers — 10 Kgs DCP- 22 Nos.
25 Kgs DCP – 11 Nos.
50 Kgs DCP – 06 Nos.
75 kgs DCP – 02
Co_2 - 28 (2 Kg, 4.5 Kg & 6.5Kg)
- Siren — 02 numbers

8. Nearby town ship / Major establishment

BENGALURU INTERNATIONAL AIRPORT : 500 Mtrs

OFF-SITE EMERGENCY COMMUNICATION NETWORK

DEVANAHALLI TALUK



IMPORTANT TELEPHONE NUMBERS OF THE RESPONDERS

DEVANAHALLI TALUKA

Sl No.	Responders	Phone Office	Mobile
1	Tahasildar	94480 89753	
2	Circle Inspector of Police	27680333	
3	Fire Station Officer		
4	Taluka Medical Officer	27403773	
5	ARTO, Devanahalli	27681999	
6	Asst. Engineer PWD/ZP	27682257	
7	Asst. Executive Engineer KPTCL	27681080	
8	Town Municipal Commissioner/Officer	27682211	
9	Community Leaders/NGO's		
10	Neighbouring Industries 1. ITC limited, Meenakunte, Via JalaHobli, Bellary Road, Bengaluru. 2. BIAL Control room	28467709	

9.8 DUTIES AND RESPONSIBILITIES OF DISTRICT ADMINISTRATION (STANDARD OPERATING PROCEDURES – FIRST, SECOND AND THIRD RESPONDERS OF THE DISTRICT)

1. REVENUE AUTHORITIES

1. The functional head is the Deputy Commissioner of the District who is also the Chairman of District Crisis Group and Chief offsite Emergency Coordinator for the purpose of Control of Emergency.
2. The role and responsibilities of the Chief Offsite Emergency Coordinator has already been described in the chapter. It has also been mentioned that in the absentia of the Dy. Commissioner, the Head Quarters Assistant to the Dy. Commissioner will assume the responsibility of Chief Offsite Emergency Coordinator.
3. Declaration and notification of Emergency.
4. Take control of emergency; establish contact, initiate appropriate action to ensure that emergency is fought as per Plan/gravity of situation, maintain co-ordination with all agencies/authorities involved in fighting emergency.
5. Establish safe/rescue routes, evacuation of people, supplementing fire fighting/rescue equipments to the site of emergency.
6. Establish rescue shelter/ rallying posts, parking yards and arranging required medical resources available for treatment of affected people, shifting affected people to hospitals if necessary and arrange for controlling order at the site and rescue shelters and other affected places.
7. Managing rescue shelters, rallying posts for human beings as well as animals, parking yards; Providing food and relief to the affected persons/animals, arrangement of security and maintaining hygienic condition at the various centers.
8. To co-ordinate with different agencies like RTO/hospitals/Truckers association for placement of vehicles at the site for evacuation of people/animals.
9. To coordinate with all other Government Service agencies for provision of electricity, water, food, cloth and other requirements in rescue shelters.
10. Activate various NGOs/Voluntary Organisations for necessary materials.

11. Providing adequate compensation to loss of life and property.
12. Declaration of all clear Signal.
13. Take all arrangements for rehabilitations of affected people and livestock after the termination of emergency.
14. Interact with radio/TV/Press etc.

To effectively manage the emergency without ambiguity, it is required to entrust individual responsibility and describe them in brief. Accordingly the following emergency plan has been drawn up

ASSISTANT COMMISSIONERS OF EACH DIVISION / TALUK

1. The Rescue shelter cum Rallying post & Parking yards are already identified, the same is enclosed in the annexure. This highlights the Parking Yards, Rescue Shelter cum rallying posts to individual factories. The A.C., will take a view of this and select the suitable place.
2. He will be the overall in charge of Rescue shelter/rallying post.
3. On receipt of information of Emergency, he will alert all his subordinates and coordinate with all other agencies involved in emergency duties like medical, transport, food, clothing, water, rescue, etc.
4. He will ensure that public is advised of the intensity of emergency. This will be done in confirmation with the Chief Offsite Emergency Coordinator.
5. He will ensure adequate food clothing in coordination with Dy. Director, Food and Civil Supplies, Voluntary Organisation, individual persons as deemed necessary in his opinion.
6. He will organize for supply of water in coordination with Assistant executive engineer, Water works, Bengaluru Rural and respective in-charge personnel in each taluks and other private agencies.
7. He will also ensure proper medical aid (first aid as well as shifting of affected persons to hospitals, etc.) in coordination with District Health Officer and District Drug Controller.
8. He will ensure adequate security and safety in coordination with Superintendent of Police (Law &Order), Bengaluru Rural Dist. and Dy.S.P. as the case may be.
9. He will organize for adequate vehicles at the site as well as at the rescue shelters for evacuation of people in coordination with RTO/hospitals/truckers Association, KSRTC, etc.

10. He will ensure proper maintenance of parking yards in coordination with DCP(Traffic), Bengaluru Rural.
11. He will arrange for rehabilitation of affected people on instructions from Deputy Commissioner.
12. He will arrange for adequate lighting facilities in coordination with Executive Engineer, KEB, as the case maybe.
13. He will arrange for proper sanitation facilities at the rescue shelters in coordination with Department of Public Health Engineering, Bengaluru rural dist and the respective in-charge personnel in each talukas, Municipal, gram panchayat officials of all talukas as the case may be.
14. He will initiate steps to inform the family of the kith and kins of the affected in confirmation with the Deputy Commissioner.

TAHSILDAR'S OF DODDABALLAPUR, NELAMANGALA, HOSKOTE AND DEVANAHALLI TALUKS

1 Tahsildars will look after all the facilities required at rescue shelter/rallying post like food, clothing, medical aid, water, electricity, sanitation and other basic necessities in coordination with respective Government Agencies as well as Voluntary Organizations.

2 They will manage and arrange for any other requirements on need basis at that point of time in coordination with respective Government Authorities.

3 They will alert all his subordinates and utilize their services to manage the rescue shelter/rallying post.

2. POLICE DEPARTMENT

1. To educate people and build confidence and help them to move to safer places
2. To escort all plant personnel and workers to safe places to avoid traffic jams
3. To clear way for entry of emergency workers.
4. To assist in taking injured people to hospitals.
5. To mobilize separate vehicles to send affected public to hospitals.
6. To render assistance in evacuation.
7. To provide shelter and food for the evacuated public.
8. To prevent public from entering the affected area.

9. To allow key personnel through blockades for directing and rendering help during emergency.
10. Allow certain predetermined and identified vehicles into any disaster area without further identification (arrange to provide placards on these vehicles).
11. Keep in constant touch with Chief Off-Site Emergency Co-ordinator, Police Head quarters and District Emergency Center, to ensure safe return of public area the emergency is completely controlled.
12. To take care of causalities in the hospitals and also take care of post mortem in such cases if any.
13. To take care of property of those who have been evacuated from their houses during emergency.
14. To work under area all supervision of Chief Off-site Emergency Co-ordinator i.e., Deputy Commissioner.
15. To maintain law and order in case of Emergency that may arise due to chemical accidents.
16. Protect the life and property in case of Emergency situation arising out of chemical disaster.
17. Controlling the traffic movements and giving such assistance to the emergency controlling authorities.
18. Evacuating the publics that are likely to be affected due to the chemical accident.
19. Identifying the dead and dealing with the causalities and informing the relatives of the dead or injured.
20. Police station near each Industrial Areas to be identified and earmarked with a Police car mounted with PA System should alert the public about the accident/Hazard.
21. Divert the traffic at National & State Highways.

3. <u>FIRE SERVICES</u>:-

1. On getting information about Emergency rush to the emergency site at the shortest time.
2. Render assistance to plant personnel in carrying out the fire fighting and rescue operations.
3. Mobilise required firefighting equipment and fire tenders
4. Search the entire plant for any missing or trapped persons if any and rescue them to a safer place.
5. Coordinate transportation of casualties and injured persons.
6. Render assistance in plugging any leakages if need arise.

7. Execute any other work as assigned by the Chief Off Site Emergency Controller.
8. Position according to the instructions of the Chief Off Site Emergency Coordinator in the respective zones and take all measures to extinguish the fire.
9. Assist the plant personnel to minimize the damage to the plant machinery and injuries to the people.
10. Cover up the entire accident zone and see that the accident does not spread to other areas.
11. Educate the public regarding the possible fire hazards from this plant and explain them the necessary precautions to be taken during such accidents.
12. It is advisable that the fire fighting crews wear luminous jackets for easy identification at night.
13. Keep in touch with the Chief Off Site emergency Coordinator informing the status of the situation.
14. To give fire alarm, indicating a fire accident, so that the public can judge that there is a fire accident in the factory.
15. To have information of all MAH units in their districts and the hazards associated with the chemicals they use.
16. To obtain the mode of tackling emergencies arising out of such chemicals from the respective factories and to equip themselves with the required equipments and materials.
17. To associate with the MAH factories as and when they conduct On Site emergency Rehearsals so as to gather their need in case of emergency.
18. To assist the district emergency authorities in formulating the off site emergency plan by providing all the information.

4. <u>MEDICAL & HEALTH SERVICES</u>:-

1. Prepare plans for emergency use of the plant dispensary as the primary medical center.
2. Prepare plans for use of alternate and additional medical center.
3. Setup temporary medical camp.
4. Ensure prompt medical facilities at affected location
5. Arrange for sending casualties to hospitals.
6. Get help of medical /Para medical personnel from the near by area.
7. Coordinate activities of primary health centers, dispensaries to get personnel and equipment.
8. Arrange for temporary mortuary, identification of dead bodies and post mortem.

9. Determine number of vehicles (Ambulances) available to transport causalities
10. Help in shifting the casualties from first aid posts, treat them and evacuate more serious cases requiring prolonged hospitalizations or major treatment to the base hospitals.
11. Take assistance from voluntary organisation such as red cross etc., to render assistance during emergency.
12. Arrange for the mutual aid from the neighboring industrial units during the crisis.
13. Keep in touch with the Chief Off-Site Emergency Co-ordinator informing the status of the situation.
14. Arrange adequate buffer stock of essential medicines like intravenous fluids, dressing material, splints, oxygen cylinders, section orators etc., keeping in mind of large number of 3^{rd} degree burns, heat radiation.
15. Keep a record of blood groups of all employees working in the concerned factory and of those working in the neighbouring industries.
16. Furnishing information about all the medical and Para medical facilities available in the district to the district emergency authority to formulate Off Site Emergency plan.
17. To make available the relevant information about the type of injuries, the first aid to be given and about the antidotes in respect of the chemicals used in the MAH factories to the respective hospitals in the district of local area.
18. To train and import required knowledge to the doctors and paramedical force in handling emergencies arising out of chemical accidents.
19. To have information about the specialised facilities available in and around the district, which can be procured in the case of, need.
20. To involve in emergency rehearsals conducted by the district emergency authorities.

5. MUTUAL AID AUTHORITIES:-

1. All the MAH units shall have mutual aid agreements with the other factories in the district.
2. All facilities available to be rendered by mutual aid shall be obtained and with consent shall be filed to the district emergency authorities.
3. Whenever rehearsals are conducted mutual aid authorities shall involve in the same.

6. VETERINARY SERVICES:-

1. Dy. Director of Animal Husbandry will be the overall in charge for treatment of affected animals at Site/Hospitals in coordination with Police/Voluntary Organisation and Revenue Authorities.
2. On receiving information from Chief Off-site Emergency Co-ordinator, he will rush to the site and activate the Temporary Medical Center (TMC) at appropriate places in consultation with Deputy Commissioner.
3. He will also coordinate with Asst. Commissioner/RTO/DCP (L&O) / Inspector of Police (Traffic), for arranging necessary vehicles for shifting of animals, if required.
4. He will be provided with one Police Officer with adequate number of Police Personnel and Home Guards to ensure the orderly treatment and management of the Temporary Medical Center.
5. The animal drug stores are identified. He will ensure the supply of adequate and necessary drugs through the Drug control Authorities of Bengaluru Rural District.

7. RTO

1. He will be the overall in charge for providing sufficient number of rescue vehicles like Trucks, Buses, Cars or any other type of transportation vehicles to Emergency site, Rescue Shelter cum Rallying Post etc. for transportation of human being as well as animals.
2. He will be receiving information from Chief Off-site Emergency Co-ordinator and swing into action.
3. He will mobilise all possible resources in arranging transportation, vehicles in co-ordination with KSRTC, Truckers Association, Travel Agencies etc., Also will ensure availability of adequate number of skilled drivers and advise the DCP(Traffic).
4. He will workout the requirement of heavy earthmoving equipment like Cranes etc., and mobilise the same in coordination with such agencies/parties.
5. He will depute adequate no. of MVIs for assisting Inspector of Police Traffic (In charge of Parking Yard,) Rescue Shelter cum Rallying Post, at the Site of Emergency.

8. EXPERTS OF DISTRICT CRISIS GROUP:-

1. All the members of the DCG will be communicated about the emergency.

2. On receipt of emergency communication, they will immediately inform the Control Room about the place of their availability and simultaneously report to the CEC.
3. They will receive necessary instructions from CEC and act accordingly.
4. They will render adequate and timely technical guidance and assist CEC and other agencies involved in the control of emergency.
5. They will also advise CEC on the message to be given to Public/press on technical matters.

9. KPTCL

1. The Executive Engineer will be responsible for all electrical power supplies and illumination of places like site of incident, rescue shelter, rallying post, parking yard, temporary medical centers, emergency route etc.
2. In case of need to establish the temporary power supply points he will do so as advised by CEC and ensure adequate and continuous power supply.
3. Assist any other agency such as Water Works, as and when needed.

10. PUBLIC HEALTH ENGINEERING

1. The Executive Engineer will be all over in charge for providing adequate sanitation facilities such as dry latrines, soak-pits etc.
2. Ensure maintenance of hygienic conditions at all such places including the site of incidence.
3. Ensure adequate supply of potable water to all places such as rescue shelters cum rallying posts, parking yard, temporary medical centers.
4. Assist other agencies as advised by CEC as and when needed.

STANDARD OPERATING PROCEDURE OF THE RESPONDERS

Tahasiladar

- Immediately after the receipt of information through incident controller of the factory, Alert the Local Karnataka State Fire and Emergency Service and Police Personnel
- Rush to the incident site and take control of emergency
- Establish the Incident Command Post at a convenient place according to circumstances and conditions and operate the emergency from the said area.
- Communicate the information to the Chief Off Site Emergency Controller,
- Oversee the rescue operation, facilities at the rescue shelters.
- Oversee arrangement food and drinks to the rescue shelters.
- Once the Chief Off Site Emergency Controller arrives at the ICP, hand over the charge to him

Circle Inspector of Police

- Rush to the spot and take control over the law and order system at the emergency site
- Cardoon off the area to prevent public entering the affect area
- Divert the traffic to the safer routes
- Assist in reaching the emergency vehicles to the emergency site.
- Assist in taking injured person to the hospital
- To clear way for emergency vehicles.
- To mobilize vehicles to shift the injured to the hospital
- To mobilize the vehicles to shift the persons to the rescue shelters
- Contact the Area Commander located at the Incident Command Post for deriving additional aid according the situation.
- Contact the Senior Officers of the Department to mobilize more supports according to the circumstances and conditions.

Fire Station Officer - Karnataka State Fire and Emergency Service

- Rush to the accident site upon the receipt of the information along with the crew
- Take stock of the situation and initiate fire fighting system and rescue of persons.
- Contact the Area Commander located at the Incident Command Post for deriving additional aid according the situation.
- Contact the Senior Officers of the Department to mobilize more supports according to the circumstances and conditions.

Taluka Medical Officer

- Report to the ICP along with crew and equipment after the receipt of Emergency information along with crew
- Establish temporary medical camp for receipt of injured at the appropriate place.
- Prioritize the treatment of casualties according to the nature and extent of injuries, age, severity etc.,
- Shift the casualties to the nearby identified hospitals for higher treatment by summoning the ambulances
- Summon additional help through Area Commander who is overseeing the mitigation process.

ARTO, Devanahalli

- Report to the Incident command post after the receipt of call from Area Commander or control room
- Identify the rallying post for parking of vehicles summoned for mitigation process
- To mobilize required vehicles to shift the injured to the hospitals.
- To mobilize the vehicles to shift the persons to the rescue shelters
- Contact the Area Commander located at the Incident Command Post for deriving additional aid according the situation.
- Contact the Senior Officers of the Department to mobilize more supports according to the circumstances and conditions.

Assistant Engineer, PWD/ZP

- Report to the Incident command post after the receipt of call from Area Commander or control room
- Provide assistance in establishing the staging area, base area, temporary medical treatment.
- To mobilize required earth moving equipment or any other required vehicles to provide necessary assistance for mitigation.
- Contact the Area Commander located at the Incident Command Post for deriving additional aid according the situation.
- Contact the Senior Officers of the Department to mobilize more supports according to the circumstances and conditions.

Revenue officials of the Taluk

- Report to the Incident command post after the receipt of call from the Area Commander or control room and receive instructions from the Area commander in augmenting the requirements at the emergency site.
- Asst. the Area Commander in mobilizing the resources required for mitigation procedure.

Town Municipal Commissioner,

- Ensure the basic logistics facilities at the ICP, temporary medical treatment area, rescue shelter according to the requirement.
- Arrange for drinking water facility at the rescue, temporary medical treatment area,
- Ensuring hygienic conditions at the rescue, temporary medical treatment area,

KPTCL Asst. Executive Engineer

- Isolate the power at the emergency area
- Ensure temporary and continuous power supply at the ICP, temporary medical treatment area, rescue shelter, staging area, and base area according to the requirement and as per the instructions of the Area Commander.

Neighboring Industries

- Report to the ICP where area commander is located.
- Provide help in catering man power for fighting fire,
- Provide required equipment, tools and tackles to the emergency site according to the requirement along with manpower.
- Provide trained first aiders for medical treatment and providing help at the triage area.

Community Leaders

- Help the police in maintaining the law and order
- Help the Incident commander in ensuring effective mitigation procedure.

FACILITIES AVAILABLE AT TALUQ - CONTROL ROOMS

A dedicated room available at the Tahasildar's office is designated as control room. Dedicated personnel 24X7 operate the control room. The facilities available at the control room are as follows:

1. Copy of the Off Site Emergency Plan of the District.
2. Copies of the On Site Emergency Plans of the MAH units located in the Taluka.
3. Two BSNL Telephones one is dedicated for receiving the call.
4. Computer
5. List of Responders identified in the Taluka level and their telephone numbers
6. List of Responders identified in the District level.
7. Details of the District Crisis Group Bengaluru Rural District.
8. Details of Ambulances
9. Details of Hospitals with facilities
10. Details of Medical shops
11. Details of heavy earth moving equipment
12. Details of facilities available at Neighboring Industries
13. Details of Rescue shelters
14. List of NGO's with Telephone numbers.

FACILITIES AVAILABLE AT THE CONTROL ROOM LOCATED AT THE DISTRICT HEAD QUARTERS.
(DEPUTY COMMISSIONERS OFFICE)

A dedicated room available at the office of the Deputy Commissioners, Bengaluru Rural District, Bengaluru is designated as control room. Dedicated personnel 24X7 operate the control room. The facilities available at the control room are as follows:

1. Copy of the Off Site Emergency Plan of the District.
2. Copies of the On Site Emergency Plans of the MAH units located in all the Talukas.
3. Two BSNL Telephones one is dedicated for receiving the call.
4. Computer and printer
5. List of Responders identified in all the Taluka level and their telephone numbers
6. List of Responders identified in the District level.
7. Details of the District Crisis Group Bengaluru Rural District.
8. Details of Ambulances
9. Details of Hospitals with facilities
10. Details of Medical shops
11. Details of heavy earth moving equipment
12. Details of facilities available at Neighboring Industries
13. Details of Rescue shelters

Section – 10

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Aircraft Accident within the Airport
(Extract of Chapter No.4 of Aerodrome Emergency Plan Ver. 4)

Source

- Document Name : BIAL - PLA-BCMS-Aerodrome Emergency Plan
- Document Version Number : 4
- Document Classification : Restricted
- Document Approved By : DGCA, New Delhi
- Document First Published : 31-08-2007
- Document Revision Date : 31-01-2012

10.0 AIRCRAFT ACCIDENT WITHIN THE AIRPORT

The Aerodrome Emergency Plan shall be implemented immediately up on an aircraft accident occurring on the airport *(ICAO 9137-7, Clause 4.1.1).* When an aircraft accident occurs anywhere within the perimeter of the aerodrome, it is an aircraft accident on the airport. Various actions and responsibilities of multiple stakeholders in an aircraft accident on the airport are as follows:

10.1 ACTIONS BY ATC

I0.1.1 Switch on fire station alarm.

10.1.2 Inform the ARFF through Hotline/ RT/Land Phone about the aircraft (s) accident with the following data:

a) Location of the accident site, referring grid map
b) Time of accident and type of the aircraft
c) Call sign(s) of the aircraft
d) Name of the involved airline(s)
e) No. of occupants on board of the aircraft, if known
f) Quantity of fuel on board, if known
g) Any dangerous goods on board, if known
h) Any specific requests or assistance made by the Pilot(s) in Command

10.1.3 Raise primary alarm to the following officers/organizations, through Hotline/ RT/ Land Phone, without any delay:

a) AOCC
b) PCR
c) FIC Chennai

10.1.4 Followed by the primary alert, obtain precise information such as the passengers on board, crew on board, endurance, cargo on board, quantity of fuel on board, details of any dangerous goods on board including its quantity, location etc., and transmit to ARFF & AOCC

10.1.5 Once AEOC is activated, give all subsequent communications to the AEOC [Instead of AOCC] through Hotline/ RT /Land Phone

10.1.6 The Watch Supervisory Officer (WSO) or his deputy shall inform the following persons/departments about the aircraft (s) accident via Hotline/Telephone:-

a) Director General of Air Safety, DGCA, Delhi
b) GM ATC & GM CNS
c) Controller of Air Safety, DGCA, Chennai
d) Member (OPS), AAI, Delhi
e) DGCA Office at Hyderabad/Chennai

10.1.7 The ATC shall seal the Digital Voice Recorder (ATC Recordings) and related documents to handover to the DGCA representative or investigating authority

10.1.8 Close the runway based on Operational Note received from the Apron Manager

10.1.9 Coordinate with Apron Manager and take appropriate NOTAM, if required.

10.1.10 The WSO or his deputy shall originate a signal addressed to DGCA, Executive Director (ATM) AAI and Director of Air Safety giving the First Information Report.

10.1.11 Notify the Duty Officer (Meteorological Department) to make special weather observation; and disseminate the alert to AOCC/AEOC, as it is received

10.2 ACTIONS BY ARFF

10.2.1 A request to respond to an aircraft accident on the airport will normally be issued by the ATS. When, however, a call is received from any other person, an accident is observed, or there is reason to consider that an accident is imminent, the Aircraft Rescue and Fire Fighting Service will take action in the same manner as if the ATS had originated the request. The ATS will then be informed of the nature of the request/call and of the response initiated.

10.2.2 The Supervisors of CFTs shall take the following actions immediately

a) Turn out all appliances immediately with crew and proceed to the site of accident as per the information received from ATC or Watch Tower, through shortest possible route
b) Obtain relevant information from ATS or Watch Tower
c) Position appliances at site wisely and properly with consideration of wind, slop, discharge range of appliance, space for other appliances, escape route etc
d) Layout media appropriately to get optimum efficiency
e) Detail crew for rescue, evacuation and medical assistance
f) Report to Duty Manager ARFF regarding the status of media available in the appliances
g) Keep the RT on and monitor the communication throughout fire fighting operations
h) If extinguishing media is used for fighting the fire, replenish immediately on arrival at the fire station

10.2.3 The Duty Manager, ARFF shall take the following actions immediately:

"Once an accident has occurred, the initial direction and control of rescue and fire fighting operations are the responsibility of the Aircraft Rescue and Fire Fighting service Officer-in-Charge. Rescue and Fire Fighting personnel will be the first to arrive at the accident site; therefore, for a certain period of time this officer will be in command"

"However, the rescue and fire fighting service officer is so involved in the rescue and fire fighting operation that as soon as the on-scene commander arrives, the onscene commander will assume command as outlined in the Airport Emergency Plan"

a) Take Initial Control and direction of on-site crash management; However, on arrival of the designated On-Scene Commander, handover the On-Scene Command role to the designated On-Scene Commander as per the transition of authority mentioned in Section 4.6 [Part B] of this document

b) Immediately establish a well-identified command post. This is a temporary post until the Mobile Command Post is available and operative *(ICAO 9137-1 Clause 4.1.3.2 c)*

c) Ensure that all appliances are turned out

d) Ensure that appliances are deployed in the best possible manner to control the situation

e) Set up triage area at a suitable location (At least 90 meters upwind of the accident site to avoid possible exposure to fire and smoke); if necessary more than one triage area may be established *(Doc 9137; 9.5.1b).* On arrival, the Triage Officer shall assume charge of the Triage as per the transition of authority given in Section 4.11 [Part B] of this document

f) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.2.4 The Supervisor Watch Tower shall take the following actions

a) On receiving the information, sound siren and announce the details received on PA system, dispatch ARFF appliances to the scene of the accident and direct to the scene

b) Obtain and pass the relevant information such as type of aircraft, time of accident, POB, fuel on board, aircraft operator, if appropriate and any dangerous goods on board including quantity and location, if known

c) Inform DGM & Head ARFF/Manager ARFF about the accident, and the Mutual Aid Fire Services with details of Rendezvous Point and any other information relevant to them

d) Record log of events, for future reference

10.2.5 Fire Technician at Fire Control Room shall take the following actions

a) Dispatch ambulances and supporting services to the site as per the requirement from Duty Manager, ARFF

b) Direct mutual aid fire and medical service equipment to the site as required by Duty Manager, ARFF

c) Call up on the off-duty crew for additional support.

d) Arrange for replenishment of media in CFTs

e) Record log of events, for future reference

10.3 ACTIONS BY AOCC MANAGER

10.3.1 On receipt of the primary alarm, the AOCC Manager shall raise secondary alert immediately as per the "SOP for Operation of Emergency Alert System" in the order listed

10.3.2 Undertake manual parallel alert to the pre-determined parallel alert group

10.3.3 Give all subsequent communication received from the ATC to Group No 1 & 2, *the first Responders,* until the AEOC is ready to take up this responsibility.

10.3.4 Maintain a log of events

10.3.5 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.4 ACTIONS BY EMERGENCY COORDINATOR

10.4.1 On receipt of a secondary alert, the designated "Emergency Coordinator" shall reach AEOC on a maximum of Sixty (60) minutes notice time and take responsibilities pertaining to overall coordination of emergency management from the Terminal Manager, keeping in mind the broader guidelines and general roles given in Section 3.1 [Part A] of this document. Other specific functions of Emergency Coordinator are listed below

10.4.2 Assume the unified Command-Control-Coordination-Communication of the entire off-site emergency management from AEOC and establish uninterrupted communication between various Support Functions such as:

- Mobile Command Post
- RV Point Coordinator
- Medical Coordinator
- BCM Coordinator
- Chair AEMC
- CISF Control Room
- Terminal Manager
- Duty Officer Care Centre
- Duty Officer Meeter-Greeter Service
- Duty Officer Crew Reception Centre
- Floor Manager Emergency Call Centre
- Duty Officer Re Union Centre
- Duty Officer DMC & Media Room
- Local Police (Law & Order / Traffic)

10.4.3 Clearly brief & assign the AEOC support staff with distinct roles viz.

a) Communicating with external and internal stakeholders,
b) Documenting and log of events
c) Logistic support to the Emergency Coordinator

10.4.4 Coordinate with Chair AEMC for external resource mobilization, assistance from external service providers like Govt, Military &, Para Military services and Embassies, as and when situation demands

10.4.5 Link up with RV Point Coordinator and the CISF for immediate processing of "Emergency Airside Vehicle Permits (AVP)" for vehicles required to enter airside via RV Point-1 (Gate No 01 ARFF Gate) for emergency response.

10.4.6 Ensure that all vehicles including mutual aid vehicles are collected at the Vehicle Holding Area (BIAL Staff Parking near ARFF Gate). Entry to airside shall be allowed only through Gate No 01 and Exit through Gate No 02 only

10.4.7 Link up with RV Point Coordinator / Landside Security to ensure that traffic from trumpet flyover to the RV point -1 are properly routed and security personnel are deployed at strategic locations

10.4.8 Deploy Civil Defence personnel for cordoning / law & order / traffic management / crash site support / triage support etc

10.4.9 Link up with Medical Coordinator to deploy sufficient number of medical practitioners, ambulances, and medical supply to every location viz. Triage, CC, M&GS, CRC, MI Room at ARFF, MI Room at PTB and any other location as situation demands

10.4.10 Coordinate with CASO for deployment of QRTs/Private Security personnel at various emergency management locations at the airport

10.4.11 Liaison with local Police for additional security coverage and surface traffic movement at the landside

10.4.12 Coordinate with Immigration & Customs for setting up of respective counters at CC & CRC; if required arrange on-the-spot / en-route clearance

10.4.13 Coordinate with the Airline to make available the passenger manifest, cargo manifest, aircraft lay out, DGR data etc required at the crash site

10.4.14 Ensure that Care Centre (CC) is activated and functioning as per protocol with adequate number of Medical, Paramedic and Trauma counselors from the medical service provider

10.4.15 Arrange appropriate number and sect of religious/clergy to be deployed at Care Centre, Meeter-Greeter Area & Crew Reception Centre

10.4.16 Coordinate with "Duty Officer CC" to get update status of its functioning and resource requirements. Ensure that every communication from CC is done exclusively to the Emergency Coordinator [no communication shall take place in between CC and M&GS]

10.4.17 Ensure that M&G Registration Counters & M&GS Area are activated as per protocol and with adequate facilities; ensure that appropriate numbers of personnel are present

10.4.18 Coordinate with "Duty Officer M&GS" to get update status of its functioning and resource requirements. Ensure that every communication from Meeter-Greeter Function goes exclusively to the Emergency Coordinator. [no communication shall take place in between CC and M&GS]

10.4.19 Ensure that Crew Reception Centre (CRC) is activated and functioning as per protocol with adequate number of Medical, Paramedic and Trauma counsellors

10.4.20 Ensure that Emergency Call Centre (ECC) activated and functions properly; provide up to date, but permissible information to ECC Floor Manager; collect information about the

functioning of the ECC from Floor Manager and communicate to AEMC / DMC for further action, if required

10.4.21 Coordinate with the Executive Secretary to the AEMC for convening AEMC meeting; ensure that all AEMC members are well informed of the situation

10.4.22 Initiate Emergency Group Conferencing with AEMC members, if situation demands a collective decision making

10.4.23 Give all subsequent but relevant communication received from the ATC to the Officers/Agencies who are directly involved in emergency management

10.4.24 Provide up-to-date and accurate information to the Terminal Manager for PA system announcement as directed by the AEMC

10.4.25 Coordinate with Duty Officer DMC for preparing initial press release, activating Media Room, and arranging press/media address

10.4.26 Ensure that the "Passenger & Family Enquiry Form" duly completed at CC and M&GS reaches directly at AEOC or to the Reconciliation area as directed by the Emergency Coordinator. Re-conciliation of the forms shall be coordinated by the Emergency Coordinator at the pre-designated location (preferably Frangipani, Alpha 2) with the help of Civil Defence Personnel or any third location decided by the Emergency Coordinator in consultation with the Airline Representative

10.4.27 Coordinate with Airline representative to start up re-union process of the involved passengers at CC/crew at CRC with their relatives assembled at the M&GS Area at the designated reunion area

10.4.28 Coordinate with BCM Coordinator to initiate Damage Assessment

10.4.29 Undertake any appropriate/additional actions required to ensure command, control, coordination and communication for off-site emergency management

10.4.30 Pass on "end of the emergency" message as it is received from the On-Scene Commander to all stakeholders in the secondary alert chain

10.4.31 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.5 ACTIONS BY AVP & HEAD, AVIATION SAFETY

10.5.1 Lead the process of evidence collection from the involved passengers / crew as far as possible, ensure witness statements etc for preliminary investigation

10.5.2 Submit the initial report to DGCA, soon after completion of the rescue and fire fighting operations.

10.5.3 Submit a detailed interim report to the DGCA with inputs regarding the accident/incident management received from all primary and secondary responders within 72 hours of the accident.

10.6 ACTIONS BY ON-SCENE COMMANDER

"In the event of any accident/incident, a designated, recognizable, and readily visible mobile command post is a high priority item. It should be established *as quickly as possible*, preferably at the same time as the initiation of fire control and rescue activities. A continuity of the command must be maintained so that each agency reporting at the mobile command post can be adequately briefed on the situation before assuming control of its individual responsibilities." *(ICAO 9137-7 Clause 5.3.2)*

10.6.1 "The mobile command post is a point where cooperating agency heads assemble to receive and disseminate information and make decisions pertinent to the rescue operations. The main features of this unit are (a) it is a mobile facility capable of being rapidly deployed, (b) it serves as COMMAND COORDINATION and COMMUNICATION centre for aircraft accident/incident, (c) it is operational during aircraft accident/incident, and (d) and correctly located with respect to wind and terrain conditions" *(ICAO 9137-2 Clause 5.31).*

10.6.2 The transition of authority of On-Scene Command at Bengaluru International Airport has been established as follows:

a) Duty Safety Auditor shall set up Mobile Command Post as per "SOP for Mobile Command Post" and shall continue at the Command Area to assist the On-Scene Commander
b) The initial command and direction at the crash site shall be assumed by the Senior Most ARFF Personnel available at the Airport
c) On arrival of the designated On-Scene Commander [*the Director Operations or the DGM & Head ARFF as authorised by the Director Operations in his Absence*], ARFF Officer-in-Charge shall hand-over role of On-Scene Commander to the former and shall remain with responsibility of managing Rescue and Fire Fighting as mentioned under Section 4.2 [Part B] of this document
d) In case crash site operations continue for a prolonged period, additional senior officials authorised by *the Director Operations* shall be mobilized to assist the designated On-Scene Commander
e) The On-Scene Commander shall be assisted by the (1) Duty Safety Auditor for all documentation/log/photography at the Command Post (2) Apron Manager for all communication (RT and other channels) between Command Post and the AEOC/ATC/Stakeholders of Command Post.

10.6.3 On-scene Command Post shall be represented by the following:

a) Representative of CISF
b) Representatives of GHA 1 & 2
c) Representative(s) of the involved airline(s)

d) Representative of Airport Medical Service
e) Representative of BIAL Aviation Safety

10.6.4 On-Scene Commander & Emergency Coordinator shall act as single point for command, control, coordination and communication pertaining to crash management at on-site & off-site, respectively

10.6.5 The Apron Control Manager, on behalf of the On-Scene Commander shall establish uninterrupted two-way communication between himself and the Emergency Coordinator; and shall convey regular updates on the rescue operations to the AEOC.

ON-SCENE COMMAND POST PROTOCOL

10.6.6 The overall on-site emergency response operations by various agencies/personnel shall be coordinated by the On-scene Commander (Ref. Figure 4.1 [PART B]) Deploy Civil Defence personnel for cordoning/law & order/traffic management/triage support/casualty loading etc.

10.6.7 Link-up with Duty Manager ARFF for providing possible assistance in stabilizing the emergency

10.6.8 Designate staging area for the inner and outer perimeters of the incident site

10.6.9 Link up with Triage Officer for providing possible assistance like arranging medical supply, ambulances and coordinating loading of passengers in to ambulances

10.6.10 Assist the Medical Transportation Officer for ambulance movement, loading of the passengers and documenting the casualty flow

10.6.11 Ensure that the lists of all persons survived, wounded and/or deceased are prepared as accurately as possible at the Triage itself.

10.6.12 Coordinate with the Medical Transport Coordinator & RV Point-1 Coordinator (Gate 01) for release of vehicles as required

10.6.13 Ensure judicious use of busses, taxis, ambulances and other transportation facilities reporting to Vehicle Staging Area for evacuation of casualties/personnel.

10.6.14 Coordinate with Duty Manager Vehicle Maintenance for more number of BIAL vehicles, if required

10.6.15 Ensure still photos and videography of the entire event without interrupting rescue operations.

10.6.16 Coordinate searching of the cockpit voice recorder, black box, and other evidences; ensure preservation of evidence.

10.6.17 Coordinate with Police to ensure custody of passenger belongings removed from the aircraft/accident site in co-ordination with the concerned airline(s); in case of an international flight also coordinate with Customs Authority

10.6.18 Ensure that the key witnesses identified and their contact details recorded. If possible, arrange recording of the initial witness accounts

10.6.19 Ensure that the walking injured and uninjured Crew are sent to the CRC in separate vehicles

10.6.20 Once the emergency is stabilized, the Duty Safety Auditor, on behalf of the On Scene Commander shall submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.7 ACTIONS BY SHIFT ASST COMMANDANT, CISF

10.7.1 On receipt of secondary alert the Shift Asst. Commandant shall take the following action:

a) Deploy the QRT at the accident site immediately for cordoning the area
b) Avail cordoning tape from the Mobile Command Post and ensure the accident site cordoned off with cordoning tape or any other physical means apart from security personnel to check trespassing of any unauthorised staff, press/media, intruders, onlookers, sightseers, souvenir hunters etc
c) Assign a senior level official at the On-Scene Command Post for direct security coordination with On-Scene Commander; he shall assume security responsibility and establish free traffic lanes on ingress and egress roads.
d) Coordinate with On-Scene Commander or Emergency Coordinator, in case additional manpower required from Civil Defence for cordoning.
e) Establish communication between all security checkpoints and Mobile Command Post and the AEOC for better coordination.
f) Brief the security personnel posted at RV Point-1 (Gate No 01) to coordinate with RV Point Coordinator and allow ENTRY [entry only] of mutual aid vehicles and personnel approaching "Emergency Airside Vehicle Pass"
g) Brief the security personnel posted at Gate No 02 to coordinate with Transport Officer and allow EMERGENCY VEHICLE EXIT [exit only] of all vehicles and personnel coming from airside
h) Establish uninterrupted ambulance route to the triage to ensure flow of emergency vehicles without blockage or reversal in to the casualty pick up area.
i) Divert all vehicles to the Vehicle Staging area, instead of directly sending to crash site/Triage
j) Arrange to control traffic flow near the accident site; admit only personnel who are having specific jobs and bonafide passes to visit the area as per "SOP for Functioning of RV Point/Vehicle Holding/Emergency AVP" listed in Annex 4 of this document.

10.7.2 Provide adequate security coverage to Terminal Building, Care Centre, Meeter & Greeter Area, Media Room, ATC, Alpha 1 & 2, and any other location as per request of Emergency Coordinator or the Terminal Manager

10.7.3 All gates and entry points to the airport operational area shall be manned and special action shall be taken to prevent entry of vehicles and persons not concerned with emergency.

10.7.4 Assist the On scene Commander to provide special security arrangements to protect the flight data and cockpit voice recorder; in case of any dangerous goods being present, protect personnel from exposure to radioactive materials.

10.7.5 Arrange to monitor the 'Identification arm bands', site passes, and/or identification tags issued to the emergency responders by AEOC.

10.7.6 Maintain law and order situation both at airside and landside until local police arrives and takes over the situation.

10.7.7 Maintain log of events

10.7.8 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.8 ACTIONS BY DUTY SAFETY AUDITOR

10.8.1 Position and set up the Mobile Command Post as specified in the "SOP for Mobile Command Post" listed in Annex 4 of this document

10.8.2 Assist On-scene Commander in Mobile Command Post documentation.

10.8.3 Coordinate with On-Scene Commander for collection and preservation of evidence for onward submission to the DGCA investigation team.

10.8.4 Ensure photography/videography of the entire operations to cover the accident management; coordinate with On-Scene Commander if require manpower from GHA or Civil Defence

10.8.5 Coordinate with the Airline Operator(s) to identify the persons alive but injured, uninjured for witness statements

10.8.6 Conduct a preliminary investigation to identify the reasons for the crash and submit a report to AVP & Head Aviation Safety

10.8.7 Maintain log of events

10.8.8 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.9 ACTIONS BY TERMINAL MANAGER

10.9.1 Activate the Aerodrome Emergency Operations Centre (AEOC) within 15 minutes of receiving secondary alert and intimate activation to the Emergency Coordinator. Until Emergency Coordinator comes, Terminal Manager shall take up off-site coordination from the AEOC

10.9.2 Arrange to activate Care Centre within 20 minutes of receiving secondary alert and intimate activation to the Emergency Coordinator

10.9.3 Arrange to activate Meeter-Greeter Service within 20 minutes of receiving secondary alert and intimate activation to the Emergency Coordinator. Activate M&G Registration Counters at least 10 minutes before activating M&GS

10.9.4 Arrange to activate Emergency Call Centre within 45 minutes of receiving secondary alert and intimate activation to the Emergency Coordinator

10.9.5 Co-ordinate with AOCC & Duty Manager ICT Airport Applications to publish relevant emergency information on Flight Information Display monitors and on TVs installed in the PTB; in case it's not possible display on FIDS and TV shall be blacked-out

10.9.6 Coordinate with Shift Asst. Commandant-CISF to deploy adequate number of security personnel at PTB, CC, M&GS and other locations.

10.9.7 Keep a listening watch of the Radio Transceivers (RT) for information on fire control, rescue etc. Do not transmit on the RT, unless it is unavoidable.

10.9.8 Coordinate with Duty Manager Landside Operations to mobilise airport taxies and other appropriate vehicles to the Vehicle Holding Area (BIAL Staff Parking) near RV Point-1 (Gate No 01)

10.9.9 Once Emergency Coordinator arrives, handover the AEOC and resume terminal management with coordination of CC, M&GS etc directly from the PTB

10.9.10 Provide up to date and accurate information as permitted by the AEMC to the passenger enquiry centre

10.9.11 Provide up-to-date and accurate information to PA system announcement section as directed by the Emergency Coordinator

10.9.12 Facilitate transportation of Meeter-Greeters & Care Centre occupants to the Re-Union Centre, once reunion is cleared by the AEMC/Emergency Coordinator

10.9.13 Maintain appropriate log of the incident

10.9.14 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.10 ACTIONS BY APRON MANAGER

10.10.1 Position Follow Me-1 near Bus Gate 3 at AOCC

10.10.2 Coordinate with Terminal Manager and/or Duty Medical Officer; on arrival of the Duty MO, transport him/her to the crash site in Follow Me 1 as fast as possible

10.10.3 In case the Duty MO is coming on landside ambulance, provide Follow me service to the ambulance for correct and faster reach at the crash site

10.10.4 Ensure that the Panel Doctors are guided to the accident site, as requested by the On-scene Commander.

10.10.5 Provide Follow Me service to mutual aid agencies and emergency responders who do not have Airside Driving Permit

10.10.6 Ensure that traffic wardens are positioned at locations on the airside service road, where Gate No 1 & 2 are joined for one-way traffic management

10.10.7 Coordinate with Sr. Manager Airside Operations for raising an Operational Note to the ATC, if required, for closure of runway/operational area; and to initiate necessary NOTAM

10.10.8 Coordinate with CISF for appropriate deployment of the QRT for security cover at right locations in the airside.

10.10.9 If operation is not suspended, ensure smooth operation on the movement area

10.10.10 Link up with Airfield Civil & Electrical for necessary support for the crash management and normal operation if applicable.

10.10.11 Maintain appropriate log of the incident

10.10.12 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.11 ACTIONS BY MEDICAL SERVICE PROVIDER

The major roles of the Airport Medical Service Provider in case of an aircraft crash shall be mandatorily fulfilled;

a) Triage Officer (at the crash site)
b) Medical Coordinator (at the AEOC)

c) Medical Transport Officer (at vehicle staging area near crash site)

10.11.1 On receipt of a secondary alert, the Duty Medical Officer shall proceed to the crash/incident site to take care of the Triage. The transition of authority at Triage is as follows:

a) The ARFF Personnel, who arrives first at the crash site shall start setting up of the Triage tents with the help of the Emergency Medical Technicians, and initial tagging, as well
b) On Arrival of the Duty MO, the ARFF personnel shall handover Triage function to him/her and concentrate on rescue and fire fighting operations.
c) The Duty MO, who takes over Triage, shall be responsible for overall Triage coordination till all casualties are shifted from the crash site to the respective locations like Hospital / CC / CRC

10.11.2 TRIAGE OFFICER: On receipt of alert, the Duty MO, who assumes role of Triage Officer, shall perform the following functions:

a) Proceed to the Follow Me 1 positioned in front of AOCC and with Apron Manager to proceed to the accident site
b) While on move to the crash location, alert the back end hospital about the disaster and requirements for Quick Response Medical Team and ambulances.
c) In case the landside ambulance is easily accessible, intimate the same to the Terminal Manager and proceed to the crash site in the ambulance.
d) Take unified Command & Control of the Triage, and deploy all resources like man and material available at the site judiciously. He/she shall try to stick to the process and procedures in the "SOP for Accident Management" as far as possible.
e) Control the flow of casualties and ensure, together with the Medical Transportation Officer, dispatch of the casualties to the appropriate hospitals by all available means of transportation immediately
f) Maintain an accurate list of casualties with available information and final disposition
g) Ensure each casualty tagged as per guidelines given in ICAO doc 9137, Part 7, Chapter 9. The Triage Officer shall classify casualties into four categories as given in Table 4.2, [PART B]
h) Every effort shall be made to ensure that Priority-1 casualties are treated first and receive ambulance transportation, when stabilized. This is the responsibility of the Triage Officer *(ICAO 9137-2 Clause 9.2.4).* However, maximum attention shall be given to transport the Priority-I casualties to the Hospital as fast as possible after initial stabilization)
i) Avoid immediate transportation of the seriously injured before stabilization. Stabilization of the seriously injured shall be done at the accident site itself. *(ICAO 9137-2 Clause 9.4.1).*
j) Priority III casualties shall be transported to the Care Centre as early as possible to avoid any post disaster traumatic disorder at the crash site. The same shall be applied in the case of the affected Crew
k) The Triage Officer gradually (on availability of more medical personnel) shall take triage management role rather than casualty stabilisation. If more human resource required for managing the Triage, the same shall be communicated to the Mobile Command Post.
l) The Triage Officer shall set up an uninterrupted RT communication between the Mobile Command Post and the Medical Coordinator at the AEOC; and shall keep on updating them about resource requirements and triage management status

m) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

CASUALTY CATEGORIZATION

- **Priority I** Immediate care **Red coloured tag Rabbit symbol**
- **Priority II** Delayed care **Yellow coloured tag Turtle symbol**
- **Priority III** Minor care **Green ambulance X symbol**
- **Priority 0** Deceased **Black coloured tag Cross symbol**

10.11.3 MEDICAL COORDINATOR: The "Medical Coordinator" has responsibility for all medical aspects of the incident and should report directly to the On-Scene Commander; the medical coordinators primary function will be administrative, not as a participant of the medical team treating the injury *(ICAO 9137-7 Clause 9.4.5).* On receipt of secondary alert, the designated Medical Coordinator shall reach the AEOC maximum within 45 minutes time and shall undertake the following actions:

a) On arrival at the AEOC, report to the Emergency Coordinator and obtain status update; establish uninterrupted communication link on RT with the Triage Officer
b) Provide medical evaluation of the ambulatory and uninjured survivors
c) Deploy adequate number of Doctors and Paramedics to attend the Triage on high priority.
d) Deploy adequate number of Ambulances as per the MoU to transport passengers to various hospitals
e) Arrange for replenishment of medical supplies, if necessary
f) Deploy adequate number of Doctors, Paramedics, Professional Psychiatrists, and/or Psycho-analysts to Care Centre, Crew Reception Centre, MI Room at ARFF, Re-Union Centre, MI Room At PTB and Meeter-Greeter Area
g) Ensure availability of adequate number of dedicated doctors, nurses, surgeons, operating rooms, ICUs, blood, and blood volume expanders available at own back up hospital and other Panel Hospitals
h) Provide Information to Emergency Coordinator about the number of beds readily available for injured passengers at various hospitals
i) Provide maximum information to the Emergency Coordinator regarding casualty management and casualty transportation to various hospitals
j) Provide any other required emergency management services
k) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.11.4 MEDICAL TRANSPORT OFFICER: The Medical Transport Officer, designated by the Medical Coordinator, shall perform the following responsibilities:

a) Managing the ambulance movement from and to the staging area and triage carrying casualties.
b) Ensure safer loading of casualties in the ambulances and document the hospital / location they are sent to

c) Directing transportation of casualties to appropriate hospitals suitable for treatment of the particular injury
d) Accounting for causalities by recording the route of transportation, destination hospital, and casualty name and extent of injuries
e) Advising hospitals when casualties are *en-route*, and
f) Update the On-Scene Commander / Medical Coordinator about further requirements of ambulances and/or casualty loaders.
g) Maintain contact with hospitals medical transportation, the Senior Duty Medical Officer, On-Scene Command post and the command post.*(ICAO 9137-7, Clause 3.6.5)*

10.11.5 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.12 ACTIONS BY INVOLVED AIRLINE

10.12.1 An Airline Representative vested with independent decision-making power shall arrive at the Mobile Command Post as soon as possible, and coordinate with the On-Scene Commander. He/she shall undertake the following functions:

a) Furnish a full passenger and crew manifest for accountability purpose *(ICAO 9137-7 Clause 10.1.1d)*
b) Provide information regarding passenger load, flight crew complement and the existence of any dangerous goods include explosives, compressed or liquefied gases, flammable liquids or solids, oxidizers, poisonous substance, infectious substance, radioactive materials and corrosives. *(ICAO 9137-7 Clause 4.1.8.2)*
c) Assist On-Scene Commander in arranging transportation of the "uninjured"/"walking injured" passengers from the accident site to the designated Care Centre
d) Assist the Medical Transport Coordinator for possible documentation of the involved passengers, ambulances in which they are loaded and Hospitals where they are to be transported
e) Make adequate arrangements, including ambulances, for transporting the involved Crew either to the CRC or to Hospitals after possible documentation
f) Link up with On-Scene Commander to complete preliminary documentation and other regulatory requirements pertaining to the dead before shifting the body to the morgue
g) Coordinate with the On-Scene commander to ensure that the belongings of the involved passengers and Crew are appropriately protected or collected for safe custody
h) Arrange to remove the passenger and crew luggage in co-ordination with Customs Authority (if applicable) under strict supervision of an officer from the Police and a Magistrate after obtaining clearance from inspecting authority
i) Assist the On-Scene Commander to retain cockpit voice data recorder, trip file, black box and essential cockpit logs to preserve and hand over to investigating authorities
j) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.12.2 A Senior Representative of the airline involved, who has independent decision-making power, shall reach at the Emergency Operations Centre, where AEMC meeting is convened, not later than 90 minutes notice. He/she shall undertake the following to facilitate off-site crash management

a) Furnish a full passenger and crew manifest for accountability purpose *(ICAO 9137-7 Clause 10.1.1d)*
b) Take responsibility of initial notification to the relatives and friends of the involved passengers and crew *(ICAO 9137-7 Clause 4.1.8.10)*
c) BIAL Terminal Management will initiate CC, M&G Registration, M&GS, Reunion Centre etc and will continue as the overall coordinator at these locations; however, on arrival of the involved airline's representatives at these locations, the functional accountability & lead shall be automatically transferred to them
d) Deploy adequate number of airline personnel /concerned GHA personnel to CC, M&GS and M&G Registration Counters, Reunion Centre etc to facilitate its smooth functioning; identify the team leads from Airline at these locations and communicate the same to the Emergency Coordinator
e) Deploy the airline Doctors and Paramedic Staff to attend the passengers at these locations, if possible
f) Activate CRC at the airside office of the involved airline or in their GHA office at airside; if service of Airport Medical Service is required, intimate the same to Emergency Coordinator
g) The aircraft operator is responsible for the removal of wrecked or disabled aircraft, but only after receiving authorisation from the aircraft accident investigation authority *(ICAO 9137-7 Clause 4.1.8.12),* as per Chapter No. 9, [PART B] of this document
h) prepare press releases in coordination with the Duty Officer DMC; Ensure that the press address has been done jointly with the airport operator *(ICAO 9137-7 Clause 4.1.8.11)*
i) Lodge an FIR with the local police pertaining to aircraft crash/accident
j) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.
a) 4.12.3 The Welfare Coordinator and the Mental Health specialist from the involved Airline, who are present at the Care Centre shall ensure the following:
a) Oversee those operations by making arrangements for additional medical services, commissary items, clothing etc if required,
b) The receptionist shall meet the transporting vehicles from the accident site to the CC and direct the uninjured passengers to the receptionist's table as per CC protocol where they will be processed. Migration from Care Centre shall be checked till identification of each passenger is done and processed as per Aerodrome Emergency Plan
c) The registrar shall record the passengers name on manifest and determine the desired reservation requirements for hotel accommodation, air travel etc
d) The registrar should list any person to be notified of the passenger's physical and or mental conditions and potential plans. The registrar then place a tag on such passengers and direct him/her to the welfare coordinator after completing registration.
e) The welfare coordinator shall (1) give full emotional and psychological support to the passengers who are involved, (2) register relatives and friends who are waiting at M&GS for information about the passenger on board, and (3) provide care comfort, and assistance to the walking injured, uninjured survivors and responding personnel, if required.

f) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.13 ACTIONS BY DUTY OFFICER DMC

10.13.1 Duty Officer DMC shall assume all responsibilities regarding Data Management Centre as specified in Section 4.3, [PART A] of this document.

10.13.2 In concurrence with the Emergency Coordinator and as per the "SOP for Activation of Dark Site & Toll free Number" listed in Annex 4 of this document, arrange to publish the toll-free emergency helpline number [1800 425 5555] in print/electronic media and activate the Dark Site.

10.13.3 Coordinate various functions related to the Press/Media management such as activation of media room, organizing press meeting frequently, giving press release, and coordination of Data Management Centre

10.13.4 Identify a dedicated press staging area, if required, safely away from the accident site to cover the incident if instructed by the AEMC to do so. Alternatively, arrange for a BIAL official photographer to capture permissible pictures that can be distributed to the press from time to time

10.13.5 Only members of the press, free-lance reporters and photographers, who have a valid press card issued by AEOC, shall be directed to the designated press staging area to cover the aircraft emergency

10.13.6 Provide transportation facility and strict escort for the press personnel to and from the scene of emergency, when they are permitted to cover the incident by the AEMC

10.13.7 Under no circumstances, any press personnel or anyone who is not involved in life saving acts or fire fighting operations shall be allowed in the cordoned area/security line at the accident/incident site.

10.13.8 Maintain log of events

10.13.9 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.14 ACTIONS BY MUTUAL AID (GOVT.) AGENCIES

10.14.1 Karnataka Fire and Emergency Services

a) Dispatch sufficient number of fire fighting personnel with necessary equipment to the Rendezvous Point-1 (Gate No 01) as requested by ARFF

b) Support the ARFF in fire fighting and rescue operations as per the Mutual Aid Agreement signed between the Airport and the State Fire Service.

10.14.2 Deputy Commissioner, BIA Rural

a) Deploy appropriate Government or Semi Government departments / officials / agencies to provide necessary support in terms of personnel and equipment for reinforcing rescue and relief operations, if decided so in the AEMC meeting.
b) In case of any death due to the accident, make adequate arrangements to identify morgue facility at the nearest government hospital and authorise transportation of the corpse, once clearance received from the investigating authority from DGCA.
c) All personnel arriving at the actual accident site shall coordinate with the On-scene Commander for concerted management of the contingency

10.14.3 Deputy Commissioner of Police (Traffic)

a) Deploy adequate number of police personnel from the trumpet flyover to the airport for coordinated traffic management, along with BIAL security services
b) Make appropriate arrangements for traffic management and ambulance movement on the approach highway to airport in such a way that scores of ambulances carrying passengers get top priority,

10.14.4 Deputy Commissioner of Police (Law and Order)

a) Based on the Air Safety Circular 5 of 1973, and Air Safety circular No. 6 of 2010 and other relevant regulations, the jurisdictional Police Authority, shall ensure that the responsibilities listed below are performed appropriately.
b) Deploy adequate number of police personnel at the accident site and at various critical locations in the airport as per request of the AEMC for safeguarding the belongings of the involved passengers and later to take custody of those items once the investigating authority from DGCA gives approval
c) All personnel arriving at the actual accident site shall coordinate with the On-scene Commander for concerted management of the contingency
d) The local Police shall be responsible for maintaining law and order situation at the accident site based on the local emergency procedures. However, Airport security [CISF] shall take initial lead in security arrangement, if the crash is within the vicinity of the airport, until the mutual aid Police arrive at the crash site.
e) In the event of Pilot and / or the Co-pilot(s) being found dead, the necessary photographs must be taken in situ prior to the removal. The removal action should be such as to cause minimum of disturbance to the aircraft wreckage/parts and any such disturbance should be fully recorded
f) The location of the passengers alive or dead should be recorded immediately during rescue/removal operation. *However, removal of the injured to the nearest hospital must not be delayed for want of formalities with regard to the recording as stated above* g) In the event of death of the crew members, the Police authorities shall ensure that the bodies are subjected to detailed post-mortem examination immediately to ascertain the precise cause of death including the presence of extent of alcohol, drugs, carbon monoxide etc. in the system. The blood, urine and the viscera of the dead should be properly preserved by the doctor carrying out the postmortem examination for further detailed chemical analysis

g) The postmortem examination shall include among those mentioned in (i) above, other aspects such as physical incapacitation, if any, prior to the accident and precise cause of death etc. The postmortem examination shall be carried out in the format attached to this document. Wherever possible, a Specialist in Aviation Medicine shall also be associated with the postmortem examination. The postmortem report in the prescribed formats shall be handed over to the Inspector of Accidents/Investigator In-charge.
h) Prior to subjecting the body of the crew member to post-mortem examination, its identity must be fully and properly established to the extent possible, full body photographed and its clothes and belongings recorded and preserved carefully in accordance with the police procedures
i) All passengers on board the aircraft who received fatal injury would be subjected to post-mortem examination indicating the nature and extent of injury as well as cause of death with special reference to carbon mono-oxide. However, this requirement may be waived off by Inspector of Accident/Investigator In-charge of Civil Aviation Department Headquarters (Director of Air Safety) if the nature of accident so warrants
j) After the above requirements have been complied with, the Police authorities may dispose of the dead bodies of passengers in accordance with their procedures and in consultation with Airlines/operator/owner (of the aircraft) concerned
k) No bodies of the dead crew members especially of the pilot and the copilot are to be released even after the post-mortem examination has been completed, by the Police authorities or any other authority. The Inspector of Accidents/the Investigator In charge/the Civil Aviation Department Headquarters (Director Air Safety) is the only authorized Officer(s) to issue instructions for the release of dead bodies of crew
l) Arrange for immediate medical examination/post-mortem of all dead passengers / crew on board in consultation with the Police and APHO/Duty Medical Officer. Since delay in post mortem may defeat the purpose of collecting evidence, immediate post mortem is essential.
m) In case facility for detailed medical examination of the passenger/crew or dead passenger/crew is not available, advise the medical/ police officer in writing to preserve sample of blood, urine (including tissues, viscera in case of post mortem) to be forwarded to a laboratory having pathological or toxicological/biochemical facility available immediately.
n) Coordinate with the Airline involved to preserve the belongings of the deceased until clearance is received from the investigating agencies. A list of items shall be prepared and jointly signed by the Police and the Airline representative
o) The Police authorities arriving at the site of crash shall assist the Airport Security Force (CISF) ensure that the public and other unauthorized persons are kept away from entering into the cordoned area and not allowed to interfere with the wreckage/parts of the aircraft or move around in the area which may obliterate the ground marks left by the aircraft which are of considerable value as a piece of evidence to the Investigator

10.14.5 AFS Yelahanka

a) Provide all necessary support in terms of personnel/equipment to support the rescue and relief operations if requested by the AEMC.
b) Take necessary initiatives to make the runway of the AFS Yelahanka available for landing of relief aircrafts or aircrafts carrying equipment for removal of disabled aircraft, if requested by AEMC.
c) All personnel arriving at the accident site shall coordinate with the Onscene Commander for concerted management of the contingency

10.15 ACTIONS BY OTHER AGENCIES WORKING AT BIA

The following Government Authorities and Partnering Agencies, engaged in various responsibilities at BIA, shall take appropriate actions on receipt of an aircraft accident/incident message, as indicated below:

10.15.1 Customs Authority:

a) Facilitate setting up of a temporary Customs counter at the Care Centre; if required arrange on-site clearance
b) Co-ordinate with the On-Scene Commander for removal of the belongings of the involved passengers/crew, mail etc. from the aircraft (s), once clearance is received from the investigating authority
c) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.15.2 Immigration Authority:

a) Facilitate setting up of a temporary Immigration counter at the Care Centre; If required arrange on-site/en-route clearance
b) Mobilise maximum workforce and keep them standby to give additional immigration assistance at any location on request of the authorities
c) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.15.3 Indian Oil Sky Tanking / Bharat Petroleum

a) On receipt of a secondary alert, mobilise maximum number of staff and keep them standby to give assistance as required by the On-Scene Commander
b) Send empty vessels to the accident site as requested by the Emergency Coordinator/ by the On-Scene Commander to offload fuel, if necessary
c) Stop fuelling/de-fuelling to any aircraft
d) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.15.4 Actions by AISATS & GGI

a) Deploy a senior official of both GHAs at the Mobile Command Post to assist the On-Scene Commander in taking Ground Handling related coordination.
b) Mobilize maximum number of work force and keep them standby; on request of the On-Scene Commander/Emergency Coordinator, dispatch them to the Vehicle Staging Area near the accident site
c) Mobilise appropriate number of Passenger Coaches and dispatch them to the Vehicle Staging Area near accident site; and on request of the On-Scene Commander, provide transportation to carry uninjured and walking injured passengers from the accident sire to the Care Centre and/hospitals
d) Prepare and keep all relevant equipment/personnel ready, to remove the wreckage / disabled aircraft as specified in Chapter 9, [PART B] of this document

e) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.16 ACTIONS BY ENGINEERING & MAINTENANCE

10.16.1 Vehicle:

a. Coordinate with the On-Scene Commander and remain standby, as per the local SOP, with appropriate number and types of vehicles /equipment such as Cabs, Bus, Crane, Forklift, Earth Moving equipment, Loader with Back-up Hoe etc with its operators that may be required for first response in case of an emergency
b. Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.16.2 Civil:

c. Coordinate with the On-Scene Commander and remain standby, as per the local SOP, with appropriate number of work force for all civil works that may be required for first response in case of an emergency
d. Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.16.3 Electrical:

e. Coordinate with the On-Scene Commander and remain standby, as per the local SOP, with appropriate number and types of equipment such as Emergency Portable Light system, Power Generators, Emergency Lighting Tower, Mobile DG Set, Portable DG Set etc, with its operators that may be required for first response in case of an emergency, in day or in night appropriately
f. Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

10.17 ACTIONS BY LANDSIDE OPERATIONS

10.17.1 On receipt of the secondary alert, the Duty Manager Landside Ops shall rush to the Rendezvous Point (RV Point-1) and assume responsibility of the designated Transport Coordinator. [Gate No 1 ARFF Gate will be the Rendezvous Point-1]

10.17.2 Once the designated Transport Coordinator arrived, handover the responsibility to him/her and assume over-all coordination of CPS personnel deployed at various locations

10.17.3 Establish an uninterrupted communication between On-Scene Commander & Emergency Coordinator; Monitor the TMRS and dispatch ambulances and other required vehicles as per the request

10.17.4 Coordinate with Pass Office at PTB to get the “Emergency Vehicle Pass” stored with them.

10.17.5 Coordinate with CISF and allow entry of mutual aid vehicles to airside only on request of the On-Scene Commander; vehicle details shall be entered in the Vehicle pass

10.17.6 Ensure that surplus vehicles reached at RV Point-1 are diverted to the designated Vehicle Holding Area, adjacent to RV Point 1 (BIAL Staff Parking)

10.17.7 Deploy CPS personnel at the entry point of the trumpet flyover, first round about, second round about, CISF Post near ATC, Airside Gate No 1 & 2

10.17.8 During emergency, Gate No 1 to be used for catering/fuelling vehicles of TAJ SATS, LSG, IOSL, BSSPL etc

10.17.9 The designated Transport Coordinator shall reach RV Point within 90 minutes of receiving secondary alert and take over from the Duty Manager Landside Ops (if required) who initially assumed the charge

10.17.10 All actions shall be performed as per the "SOP for Landside Traffic Management during emergency"

10.17.11 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier in the prescribed format to AVP & Head Aviation Safety and the BCM Coordinator for further compilation and submission to the relevant authorities.

Section – 11

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Aircraft Accident Outside the Airport (Within The Vicinity)
(Extract of Chapter No.5 of Aerodrome Emergency Plan Ver. 4)

Source

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11.0 AIRCRAFT ACCIDENT OUTSIDE THE AIRPORT (WITHIN THE VICINITY)

VICINITY OF THE AIRPORT: The vicinity of the Bengaluru International Airport shall be the area up to 5 KM on the approach path; and for other areas, it is 2 KM around the airport boundary. *(AAI Order No. 72/81, 3 of 1999).*

11.01 ACTIONS BY ATM/CNS

11.1.1 Switch on fire station alarm

11.1.2 Inform ARFF through RT / Hotline / Land Phone about the aircraft accident with the following data:

a) Location of the accident site, referring to the grid map
b) Time of the accident, if available
c) Type of the involved aircraft and call sign
d) Name of the aircraft operator
e) No. of occupants on board, if available
f) Quantity of fuel on board, if available
g) Any dangerous goods on board (Quantity & Location), if available
h) Any specific requests/assistance made by the Pilot(s) in command, if available

11.1.3 Raise primary alarm to the following, through RT/Telephone/ Hotline/Land Phone, without further delay:
a) AOCC
b) PCR
c) FIC Chennai

11.1.4 After raising primary alert, contact the involved airline(s) to obtain precise information such as the number of passengers (if possible), cargo on board, quantity of fuel on board and details of any dangerous goods on board including its quantity, location etc., and this information shall be transmitted to the AOCC Manager

11.1.5 Once AEOC is activated, give all subsequent communications to the AEOC [*not to AOCC*] through Hotline/ Radio Telephone /Land Phone

11.1.6 The WSO or his deputy shall inform the following persons/departments about the aircraft accident via hotline/Telephone:-

a) Director General of Air Safety, DGCA, Delhi
b) GM ATC
c) GM CNS
d) Controller of Air Safety, DGCA, Chennai
e) Member (OPS), AAI, Delhi
f) DGCA Office at Hyderabad/Chennai

11.1.7 The ATC shall seal the Digital Voice Recorder (ATC Recordings) and other evidences to handover to the DGCA investigating authority

11.1.8 Take appropriate NOTAM (Notice to Airmen), if required

11.1.9 The WSO or his deputy shall originate a signal addressed to DGCA, Executive Director (ATM) AAI and Director of Air Safety giving the First Information Report

11.1.10 Notify the Duty Officer (Meteorological Department) to make special weather observation, and pass on the same to AOCC Manager

11.1.11 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.2 ACTIONS BY ARFF

Notification of an aircraft accident off the airport (within the vicinity) will normally be received from the air traffic services, local police or local fire departments. *(ICAO 9137 Clause 4.2.4.1)* On receipt of such a call, the following actions shall be taken:

11.2.1 On receipt of a primary alert, the Duty Manager ARFF shall perform the following actions:

a) Dispatch one CFT and one Ambulance with manpower, if the aircraft is of length less than 39 meters and fuselage width up to 5 meters
b) If the aircraft length is of larger size than point (a) above, then dispatch two CFTs and two Ambulances with manpower
c) Report to ATC regarding ARFF category available

11.2.2 On receipt of a primary alert, the Supervisor Watch Tower shall perform the following actions:

a) Activate the alarm and dispatch the appliances in consultation with DGM & Head ARFF or Manager/DM ARFF
b) Direct the appliances to the site
c) Pass on relevant information pertaining to the accident
d) Inform DGM & Head ARFF or Manager/DM ARFF about mutual aid service
e) Obtain periodical report from the site and convey to Duty Manager ARFF
f) Call the off-duty crew to maintain maximum possible category
g) When CFTs report back to the fire station, arrange for replenishment of media in CFTs
h) Log all actions related to rescue and fire fighting operations. Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.2.3 On receipt of a primary alert, the Supervisor CFT shall perform the following actions:

a) Turn out appliances immediately with crew and proceed to the site of accident as per the information received from ATC/Watch Tower, through shortest possible routes
b) Obtain relevant information from ATC/Watch Tower

c) Position the appliances at site with consideration of wind, slop, discharge range of appliance, escape route etc layout media appropriately to get optimum efficiency
d) Detail crew for rescue, evacuation and medical assistance
e) Report to Duty Manager regarding the media available in the appliances

11.2.4 Immediately establish a well identified command post and take lead in command, coordination and communication until the mutual aid fire service arrives and takes over the charge

11.2.5 When Karnataka Fire and Emergency Service (KSFES) is available at the off airport accident site (but within the vicinity), the overall command shall be exercised by the senior-most official of the KSFES, available there.

11.2.6 The Fire Station Watch Tower shall despatch mobile lighting units to the accident site if the accident occurred in the night/poor visibility condition, based on the actual requirements.

11.3 ACTIONS BY AOCC MANAGER

11.3.1 On receipt of the primary alarm from ATC, the AOCC Manager shall raise secondary alarm immediately as per the "SOP for Operation of Emergency Alert System", in the order listed

11.3.2 Give all subsequent communication from the ATC to Group No 1 & 2, until the AEOC is ready to take up this responsibility.

11.3.3 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.4 ACTIONS BY EMERGENCY COORDINATOR

11.4.1 On receipt of a secondary alert, the designated "Emergency Coordinator" shall reach AEOC on a maximum of Sixty (60) minutes notice time and resume all responsibilities pertaining to overall off-site coordination of emergency management from the Terminal Manager

11.4.1 Establish uninterrupted two-way communication between AEOC and On-Scene Commander; The Executive Assistant Emergency Coordinator shall constantly monitor RT communication from the accident site and update Emergency Coordinator; simultaneously log communication also shall be maintained

11.4.2 Arrange the AEOC support staffs to maintain log of events and RT communication between AEOC and ATC/all other sub-functions, as applicable

11.4.3 Assist Medical Coordinator to deploy sufficient number of medical practitioners, ambulances, and medical supply to the accident location if situation demands.

11.4.4 Coordinate with CASO for deployment of QRTs at the accident site until the local Police arrive.

11.4.5 Coordinate with AGM Emergency & BCM to mobilize large number of Civil Defence Volunteers to assist the rescue and Triage operations

11.4.6 Ensure that M&G Registration Counters activated and properly coordinated by Duty Officer M&GS.

11.4.7 Ensure that M&GS activated with adequate facilities and appropriate numbers of personnel are present

11.4.8 Obtain information about functioning of M&GS from the Duty Officer M&GS and arrange if any additional requirements noticed

11.4.9 Ensure that the "Passenger & Family Enquiry Form" duly completed at M&GS reaches directly at AEOC for further processing

11.4.10 Ensure that Emergency Call Centre (ECC) activated and functions properly; provide up to date, but AEMC permitted information to ECC Floor Manager; collect information about the functioning of the ECC from Floor Manager and communicate to AEMC / DMC for further action, if required

11.4.11 Give all subsequent but relevant communication received from the ATC to the Officers/Agencies who are directly involved in emergency management

11.4.12 Ensure that Aerodrome Emergency Management Committee (AEMC) members are well informed of the situation; coordinate with the Executive Secretary to convene AEMC Meeting.

11.4.13 Coordinate with Duty Officer DMC for preparing initial press release, activating Media Room, and arranging press/media address

11.4.14 Pass on "end of the emergency" message as it is received from the On-Scene Commander to all in the secondary alert chain.

11.4.15 Once the emergency is stabilized, arrange to submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.5 ACTIONS BY AVP & HEAD, AVIATION SAFETY

11.5.1 Coordinate with the Airline Operator(s) and the Mutual Aid Security Forces to take over the cockpit voice data recorder, Black Box, and all flight deck logs for further submission to the DGCA

11.5.2 Arrange to take necessary photo and video graph of the accident for futurereference and investigation

11.5.3 Soon after completion of the rescue and fire fighting operations, submit a detailed interim reports to the DGCA within 72 hours of the accident

11.6 ACTIONS BY SHIFT INCHARGE, CISF

11.6.1 On receipt of secondary alert, the Shift Asst. Commandant shall take the following action initially for security arrangements at the crash site. However, once the local Police arrive, security arrangements at the crash site shall be under the command and control of the local Police

a. Coordinate and deploy adequate number of Quick Response Team at the crash site to safeguard and cordon of the area
b) Cordon-off the accident site to check all unauthorised staff, press/media, intruders, onlookers, sightseers, souvenir hunters etc entering in to the accident site
c) Give necessary briefing to the CISF person on duty near the crash gate to give additional security to it as ARFF emergency vehicles for proceeding to the crash site opened it.
d) Provide adequate security coverage to Terminal Building, Care Centre, Meeter & Greeter Area, Media Room, ATC and Administrative Building, Landside Airline Building and any other location as per request of the Emergency Coordinator
e) Coordinate Civil Defence Command and deploy the Volunteers for cordoning off the site and other appropriate responsibilities

11.6.2 Give special briefings to the staff who man the Gates and entry points to the airport operational area to prevent entry of vehicles and persons not concerned with emergency

11.6.3 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.7 ACTIONS BY DUTY SAFETY AUDITOR

11.7.1 Dispatch the Command post vehicle to the accident site for on-site command, control, coordination and communication. Provide all possible support to the senior fire officer who assumes the on-scene command role at the crash site, until mutual aid fire service arrives.

11.7.2 Assist AVP & Head Aviation Safety, in coordinating with the involved Airline Operator and the Mutual Aid Security Forces for preservation of all other evidences concerned with the aircraft accident for onward submission to the DGCA investigation team

11.7.3 Maintain log of events

11.7.4 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.8 ACTIONS BY TERMINAL MANAGER

11.8.1 Activate the Aerodrome Emergency Operations Centre (AEOC) within 15 minutes of receiving secondary alert and inform Emergency Coordinator. Until Emergency Coordinator comes, Terminal Manager shall take up off-site coordinate from the AEOC

11.8.2 Arrange to activate Meeter & Greeter Service within 20 minutes of receiving secondary alert and inform Emergency Coordinator. Activate M&G Registration Counters at least 10 minutes before activating M&GS

11.8.3 Arrange to activate Emergency Call Centre within 45 minutes of receiving secondary alert and inform Emergency Coordinator; after activation, communicate the same to Duty Officer DMC.

11.8.4 Coordinate with Shift Asst. Commandant-CISF to deploy adequate number of security personnel at PTB, M&GS and other relevant locations.

11.8.5 Once Emergency Coordinator arrives, handover the AEOC and resume terminal management with direct coordination of M&GS

11.8.6 Provide up to date and accurate information as permitted by the AEMC to the passenger enquiry centre

11.8.7 If any other emergency support services/locations needs to be activated on real-time, basis, undertake the same and inform the Emergency Coordinator immediately

11.8.8 Maintain log of events

11.8.9 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.9 ACTIONS BY ON-SCENE COMMANDER

Even if the aircraft crash occurred outside the airport, since its in the vicinity, the Mobile Command Post shall be set up by the Airport Operator and the designated. On-Scene Commander shall assume the Unified Command, Control, Coordination and Communication role for best management of the crisis.

11.9.1 The transition of authority of On-Scene Command in case of a crash outside the airport (but within the vicinity) has been established as follows:

a) Duty Safety Auditor shall set up Mobile Command Post as per "SOP for Mobile Command Post" and shall continue at the Command Area to assist the On- Scene Commander
b) The initial command and direction at the crash site shall be assumed by the Duty Manager ARFF.
c) On arrival of the designated On-Scene Commander [*the Director Operations or the DGM & Head ARFF or the Mutual Aid Fire Service*], ARFF Officer-in-Charge shall hand-over role of On-Scene Commander to the former and shall remain with responsibility of managing Rescue and Fire Fighting
d) The On-Scene Commander shall be assisted by the
    i. Duty Safety Auditor for all documentation/log/photography at the Command Post
    ii. Apron Manager for all communication (RT and other channels) between command Post and the AEOC/ATC/Stakeholders of Command Post.

11.9.2 Mobile Command Post shall be represented by the following:

a) Representative of CISF or Police
b) Representative of Mutual Aid Fire Service
c) Representative(s) of the involved airline(s)
d) Representative of Medical Service Provider
e) Representative of BIAL Aviation Safety

11.9.3 On-Scene Commander & Emergency Coordinator shall act as single point for command, control, coordination and communication pertaining to crash management at on-site & off-site, respectively

11.9.4 The Apron Control Manager, on behalf of the On-Scene Commander shall establish uninterrupted two-way communication between himself and the Emergency Coordinator; and shall convey regular updates on the rescue operations to the AEOC.

11.9.5 The overall on-site emergency response operations by various agencies/personnel shall be coordinated by the On-scene Commander; Further, the following actions shall be performed by the On-Scene Commander on actual requirements:

a. Depending up on the crash location, activate the RV point No 2 and/or 3 and communicate the same on RT & TMRS
b. Deploy Civil Defence personnel for cordoning/law & order/traffic management/triage support/casualty loading etc.
c. Designate staging area for ambulance and relief vehicles
d. Link up with Triage Officer for providing possible assistance like arranging medical supply, ambulances and coordinating loading of passengers in to ambulances
e. Assist the Medical Transportation Officer for ambulance movement, loading of the passengers and documenting the casualty flow
f. Ensure that the lists of all persons survived, wounded and/or deceased are prepared as accurately as possible at the Triage itself.
g. Coordinate with the Medical Transport Coordinator & RV Point-2 or 3 (as the case may be) Coordinator for release of vehicles as required
h. Ensure judicious use of busses, taxis, ambulances and other transportation facilities reporting to Vehicle Staging Area for evacuation of casualties/personnel.
i. Ensure still photos and videography of the entire event without interrupting rescue operations.
j. Coordinate searching of the cockpit voice recorder, black box, and other evidences; ensure preservation of evidence.
k. Coordinate with Police to ensure custody of passenger belongings removed from the aircraft/accident site in co-ordination with the concerned airline(s); in case of an international flight also coordinate with Customs Authority
l. Ensure that the key witnesses identified and their contact details recorded. If possible, arrange recording of the initial witness accounts
m. Facilitate smooth transfer of roles from the Airport Fire, Security, and Medical Services to the Govt Fire, Police, and Medical Agencies on their arrival.
n. Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.10 ACTIONS BY APRON MANAGER

11.10.1 Maintain contact with the ATC to know the update information on flight movements

11.10.2 Report at the crash site immediately; if required, guide the Medical Officer to the crash site

11.10.3 Provide support to the On-Scene Commander in maintaining communication with the AEOC / ATC

11.10.4 Send an operational note to the ATC, if required, for necessary NOTAM, in consultation with Sr. Manager Airport Operations

11.10.5 Maintain log of events

11.10.6 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.11 ACTIONS BY MEDICAL COORDINATOR

11.11.2 Until the Medical Coordinator from back-up hospital arrives at the AEOC, the Duty MO shall assume charge of Triage Officer and respond to the contingency.

11.11.3 Coordinate with the Terminal Manager and rush to the crash site in the Landside Ambulance

11.11.4 Arrange adequate number of ambulances to transport the passengers to various hospitals

11.11.5 Provide adequate number of Doctors, Psychiatrists, and/or Psycho-analysts to the Meeter & Greeter Services on request of the Emergency Coordinator

11.11.6 Ensure appropriate number of doctors, nurses, surgeons, operating rooms, ICUs, blood, and blood volume expanders available at the panel hospital

11.11.7 Maintain log of events

11.11.8 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.12 ACTIONS BY INVOLVED AIRLINE OPERATOR

11.12.2 A senior most representative of the involved airline, who has independent decision making power, shall reach the Emergency Operations Centre within 90 minutes of notification to attend the AEMC Meeting

11.12.3 Provide adequate number of personnel to the M&GS to facilitate its functioning; direct the airline Doctors, if available, to M&GS area to attend the relatives and friends in panic

11.12.4 The airline representative shall also undertake the following:

a) Prepare new releases in coordination with the Duty Officer DMC; Ensure that the press address has been done jointly with the airport operator *(ICAO 9137-7 Clause 4.1.8.11)*
b) Provide information regarding passenger load, flight crew complement and the existence of any dangerous goods include explosives, compressed or liquefied gases, flammable liquids or solids, oxidizers, poisonous substance, infectious substance, radioactive materials and corrosives. *(ICAO 9137-7 Clause 4.1.8.2)*
c) Take responsibility of initial notification to the relatives and friends of the involved passengers and crew *(ICAO 9137-7 Clause 4.1.8.10)*
d) Deploy adequate number of Airline/GHA personnel to assist Emergency Coordinator for smooth functioning of Meeter and Greeter services, Emergency Call Centre and DMC
e) Lodge First Information Report (FIR) with the local police pertaining to the crash/accident
f) Maintain log of events
g) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.13 ACTIONS BY DUTY OFFICER DMC

11.13 Arrive at the AEOC and assume all responsibilities of Duty Officer DMC. [as given in Section 4.3, PART A of this document]

11.13.2 In concurrence with the Emergency Coordinator of BIAL and as per the "SOP for Activation of Dark Site & Toll Free Number" listed in Annex 4 of this document, arrange to publish the toll-free emergency helpline number [1800 425 5555] in print/electronic media.

11.13.3 Coordinate various functions related to the Press/Media management such as activation of media room, organizing press meeting frequently, giving press release, coordination of Data Management Centre and sharing information for the ECC

11.13.4 Prepare press releases in consultation with the involved airline representative and facilitate the official spokesperson of BIA to address the press/media along with representative of the affected airline

11.13.5 Maintain log of events

11.13.6 Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.14 ACTIONS BY MUTUAL AID (GOVERNMENT) AGENCIES

11.14.1 Karnataka Fire & Emergency Services (KF&ES)

a) The mutual aid fire service shall be responsible for an aircraft emergency anywhere outside the airport. However, Aircraft Rescue and Fire Fighting services shall take initial lead in emergency response, if the crash is within the vicinity of the airport, until the mutual aid fire service arrives at the crash site.
b) Once KSFES is available at the accident site, the senior most official of the KSFES present at the site shall exercise on-scene command [command, control, coordination and communication]; and shall take appropriate actions as indicated in their local Emergency Procedures
c) Photography may be carried out freely by the Police authorities and/or the Fire Fighting Authorities taking due care that no ground marks are obliterated and the aircraft wreckage/parts are not disturbed for this purpose. The Inspector of Accident / Investigator-In-charge may, however, take over this function on his arrival
d) During rescue operation, fire fighting services play a very important role. Whilst extricating the bodies from the wreckage alive or dead, the Officer-in-Charge supervising the operation shall ensure that minimum disturbance to the wreckage is caused while extricating such bodies and that he will keep adequate notes for the purpose to be passed on to the Inspector of Accident/Investigator-in-Charge conducting the investigation.
e) Any movement of the controls/cutting of wires, cables etc. must be made note of for the purpose. If it is possible, free use of photography can be made prior to removal of such bodies. However, where there is reasonable doubt to believe that the person to be extricated from the wreckage is still alive no delay should be caused in removal of that body. In the event of there being sufficient reasons to believe that body to be extricated is a dead one all possible care should be exercised as stated above

11.14.2 Deputy Commissioner of Police

a) Based on the Air Safety Circular 5 of 1973 and Air Safety circular No. 6 of 2010 and other relevant regulations, the jurisdictional Police Authority, shall ensure that the responsibilities listed below are performed appropriately.

b) On receipt of information regarding an aircraft accident away from a Civil or Military Airfield, the Police authorities shall Notify the accident by the quickest possible means to the Officer-In charge of the nearest Civil/Military Aerodrome

c) Even prior to arrival of the Inspector of Accident or Officer In charge of the nearest Aerodrome/any Officer of the Civil Aviation Department, the Police authorities shall initiate action

- to extricate persons from the aircraft;
- to arrange for immediate First Aid and medical attention;
- to extinguish fire and;
- to assist the officers of the Civil Aviation Department on their arrival.

d) Whilst rescuing the injured crew members [Pilot and the Co-pilot(s)], their identification and location in or around the aircraft must be carefully observed and recorded.

e) The local Police shall be responsible for providing security and maintaining law and order situation at the accident site based on the local emergency procedures. However, Airport security [CISF] shall take initial lead in security arrangement, if the crash is within the vicinity of the airport, until the mutual aid Police arrive at the crash site.

f) In the event of Pilot and / or the Co-pilot(s) being found dead, the necessary photographs must be taken in situ prior to the removal. The removal action should be such as to cause minimum of disturbance to the aircraft wreckage/parts and any such disturbance should be fully recorded

g) The location of the passengers alive or dead should be recorded immediately during rescue/removal operation. However, removal of the injured to the nearest hospital must not be delayed for want of formalities with regard to the recording as stated above h) Removal of the person dead or alive from the wreckage is the responsibility of the Police/the Fire Fighting Services as in any other accident.

h) In the event of death of the crew members, the Police authorities shall ensure that the bodies are subjected to detailed post-mortem examination immediately to ascertain the precise cause of death including the presence of extent of alcohol, drugs, carbon monoxide etc. in the system. The blood, urine and the viscera of the dead should be properly preserved by the doctor carrying out the postmortem examination for further detailed chemical analysis

i) The postmortem examination shall include among those mentioned in (i) above, other aspects such as physical incapacitation, if any, prior to the accident and precise cause of death etc. The postmortem examination shall be carried out in the format attached to this Circular. Wherever possible, a Specialist in Aviation Medicine shall also be associated with the postmortem examination. The postmortem report in the prescribed formats shall be handed over to the Inspector of Accidents/Investigator In-charge

j) Prior to subjecting the body of the crew member to post-mortem examination, its identity must be fully and properly established to the extent possible, full body photographed and its clothes and belongings recorded and preserved carefully in accordance with the police procedures

k) All passengers on board the aircraft who received fatal injury would be subjected to post-mortem examination indicating the nature and extent of injury as well as cause of death with special reference to carbon mono-oxide. However, this requirement may be waived off by Inspector of Accident/Investigator In-charge of Civil Aviation Department Headquarters (Director of Air Safety) if the nature of accident so warrants

l) After the requirements of 4.2.6 above have been complied with, the Police authorities may dispose of the dead bodies of passengers in accordance with their procedures and in consultation with Airlines/operator/owner (of the aircraft) concerned

m) No bodies of the dead crew members especially of the pilot and the copilot are to be released even after the post-mortem examination has been completed, by the Police authorities or any other authority. The Inspector of Accidents/the Investigator In charge/the Civil Aviation Department Headquarters (Director Air Safety) is the only authorized Officer(s) to issue instructions for the release of dead bodies of crew

n) The entire site of the crash area, including wreckage trial shall be immediately cordoned off and guarded by the Police till such time the investigation of the accident has been completed and positive instructions in writing issued to the Police authorities by the Inspector of Accidents/Investigator In charge or by DAS in the Office of the Director General of Civil Aviation

o) The Police authorities arriving at the site of crash shall ensure that the public and other unauthorized persons are kept away from entering into the cordoned area and not allowed to interfere with the wreckage/parts of the aircraft or move around in the area which may obliterate the ground marks left by the aircraft which are of considerable value as a piece of evidence to the Investigator

p) The parts of the wrecked aircraft shall not be disturbed or interfered with except for the purpose of providing support to the injured, removal of dead bodies, extinguishing of fire and saving the wrecked parts

q) Police authorities shall record the names and addresses of all the eye witnesses and others who may have first-hand knowledge of the accident and supply such a list to the Inspector of Accident/Investigator In charge on his arrival for the purpose of investigation and facilitate production of such witnesses before him. The copies of the statements of eye witnesses, if recorded may be handed over to the Inspector of Accident/Investigator-in-Charge

r) Photography may be carried out freely by the Police authorities and/or the Fire Fighting Authorities taking due care that no ground marks are obliterated and the aircraft wreckage/parts are not disturbed for this purpose. The Inspector of Accident / Investigator-In-charge may, however, take over this function on his arrival

s) During rescue operation, fire fighting services play a very important role. Whilst extricating the bodies from the wreckage alive or dead, the Officer-in-Charge supervising the operation shall ensure that minimum disturbance to the wreckage is caused while extricating such bodies and that he will keep adequate notes for the purpose to be passed on to the Inspector of Accident/Investigator-in-Charge conducting the investigation.

t) Any movement of the controls/cutting of wires, cables etc. must be made note of for the purpose. If it is possible, free use of photography can be made prior to removal of such bodies. However, where there is reasonable doubt to believe that the person to be extricated from the wreckage is still alive no delay should be caused in removal of that body. In the event of there being sufficient reasons to believe that body to be extricated is a dead one all possible care should be exercised as stated above

u) Where the fire fighting services are not available and such rescue operations are being carried out by the Police authorities, the Police Officer-In-charge of the operation shall ensure that the above instructions with regard to fire fighting and rescue operations are complied with

v) For investigation and evidence purpose, the following Proforma shall be used:

- Post mortem report requirements of aircraft accident investigation

- Autopsy guide for Duty Medical Officers – fatal aircraft accidents investigations
- Collection, preservation, storage and despatch of specimen

11.15 ACTIONS BY DUTY MANAGER, ENG. & MAINTENANCE

11.15.1 Vehicle:

a) Coordinate with Emergency Coordinator and remain standby, as per the local SOP, with appropriate number and types of vehicles /equipment such as Cabs, Bus, Crane, Forklift, Earth Moving equipment, Loader with Back-up Hoe etc with its operators that may be required for first response in case of an emergency
b) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.15.2 Civil:

a) Coordinate with Emergency Coordinator and remain standby, as per the local SOP, with appropriate number of work force for all civil works that may be required for first response in case of an emergency
b) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

11.15.3 Electrical:

a) Coordinate with Emergency Coordinator and remain standby, as per the local SOP, with appropriate number and types of equipment such as Emergency Portable Light system, Power Generators, Emergency Lighting Tower, Mobile DG Set, Portable DG Set etc, with its operators that may be required for first response in case of an emergency.
b) Once the emergency is stabilized, submit a detailed incident report within 48 hours or earlier to AVP & Head Aviation Safety for further submission to the relevant authorities.

Section – 12

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Natural Disasters
(Extract of Chapter No.10 of Aerodrome Emergency Plan Ver. 4)

Source

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12. NATURAL DISASTERS

The possible natural calamities that can affect Bengaluru International Airport are:

1. Earthquake (seismic zone III)
2. Torrential rain/thunderstorm resulting water logging
3. Grass Fire

The various actions and procedures recommended in this chapter are in compliance with "The National Disaster Management Act 2005" and various regulations laid down by the NDMA, ICAO, and DGCA

a) In case of any major natural disaster, especially earthquake, resulting major loss in terms of life and property, the Incident Command System of State Disaster Management Authority (SDMA) shall be set up at the airport.
b) The command, control and coordination in incident management shall be the responsibility of the State Incident Commander.
c) To contain a developing scenario, the Aerodrome Emergency Management Committee (AEMC) chaired by the Deputy Commissioner of Bengaluru Rural/ shall be synchronized with the Incident Command System (ICS) of SDMA and the airport operator shall provide all possible support to the state machinery.
d) In cases where the entire airport is affected with a natural disaster where external resources are extensively required, the State Disaster Management Authority shall coordinate with various services like State Police, Rescue Team, Relief Departments etc and a concerted effort shall be put in place.
e) Role of airport agencies in major natural disasters are very much limited; however, in case of natural disasters, which has limited implications, the following agencies shall take actions as listed.

12.1 ACTIONS BY ATC

12.1.1 In case an alert/warning about a natural disaster received, pass on the same immediately to ARFF and AOCC for immediate dissemination and response actions
12.1.2 Pass on the warning to FIC Chennai, WSO-AAI and PCR
12.1.3 Initiate necessary NOTAM, if required
12.1.4 In case of an earthquake, shut down every electric/electronic equipment at ATS and instruct the staff to be evacuated from the tower and leave the building premises to an open area

12.2 ACTIONS BY ARFF

12.2.1 Inform the mutual aid fire and emergency services on hotline/phone about the disaster/warning with its expected magnitude and approximate loss
12.2.2 In case of an earthquake, shut down every electric/electronic equipment at fire station and instruct the staff to be evacuated from the building to the Safe Assembly Area
12.2.3 In case of earthquake, position all CFTs and other vehicles safely away from the Fire station on open ground and switch of the engines.
12.2.4 Switch-off power supply, air-conditioning system, Gas pipelines if any, and other utilities at the main switches or valves, if not already done

12.3 ACTIONS BY AOCC MANAGER

12.3.1 On receipt of a primary alert from any source regarding a natural disaster, raise secondary alert as per "SOP for Operation of Emergency Alert System"

12.3.2 Ensure that the following personnel have received the alert

a) Terminal Manager
b) CISF Control room are intimated
c) AGM Emergency & BCM

12.3.3 Subsequently inform the PCR & Karnataka Fire Service about the disaster/alert

12.3.4 In case of an earthquake, shut down every electric/electronic equipment at and instruct the staff to be evacuated from the space to the Safe Assembly Area

12.4 ACTIONS BY TERMINAL MANAGER

12.4.1 On receipt of secondary alert from any source analyse the situation and if evacuation of the PTB is required, execute PTB evacuation as specified in Chapter 14 of this document

12.4.2 Ensure that the Technical and Infrastructure department has been informed to switch "off" power supply, gas pipeline if any, and air conditioning systems; ensure that other utilities are switched "off" at the main/regulators.

12.5 ACTIONS BY APRON & DUTY SAFETY AUDITOR

12.5.1 Apron Manager in coordination with Duty Safety Auditor shall ensure that all appliances/equipment on apron are appropriately locked and placed safely from any potential threat

12.5.2 In case of an earthquake alert, ensure that the aircrafts on contact stand are pushed back to a safer distance

12.5.3 In case of a natural disaster alert, advise GHAs and airlines to stop all services of the aircraft in any form and detach all equipment from the aircrafts

12.5.4 If possible stop the vehicle movement on apron

12.6 ACTIONS AGM EMERGENCY & BCM

12.6.1 On receipt of a natural disaster alert, coordinate with State Disaster Management Authority for activating Incident Command System at the airport or at the location decided by the SDMA

12.6.2 Synchronize AEMC with the Incident Command System (ICS) to facilitate disaster management at the airport

12.6.3 Coordinate with different departments for a headcount of their staff present during the disaster to ensure that all airport staff are safe and properly evacuated to safer place.

12.6.4 Activate the Business Continuity Plans of various critical functions to resume operations at the earliest.

Section – 13

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Mock Excercises & Rehearsals

Offsite Mock Excercises are conducted yealy once involving all the stake holders, under the guidelines of National Disaster Managtement Authority, New Delhi and State Disaster Management Authority and in association with Director General Civil Aviation and BIAL.

Section – 14

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Passenger Terminal Building Evacuation Plan (FIRE SAFETY PLAN FOR PTB)
(Extract of Chapter No.14 of Aerodrome Emergency Plan Ver. 4)

Source

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14.0 PASSENGER TERMINAL BUILDING EVACUATION PLAN (FIRE SAFETY PLAN FOR PTB)

14.1 PURPOSE AND OBJECTIVES

a) As per NBC Part 4, Clause 3.1.5 (C), the Passenger Terminal Building (PTB) of Bengaluru International Airport comes under Group D-3 buildings, built up with the purpose of assembly of three hundred or more people. *Ipso fact*, emergency evacuation of the Passenger Terminal Building of Bengaluru International Airport shall be based on principles and standards laid down by the relevant authorities to safeguard the life of each human being.

b) Purpose of the Fire Safety Plan for PTB (PTB Evacuation Plan), is to "establish method of systematic, safe, and orderly evacuation of an area or building by its occupants in case of fire or other emergency in the least possible time to a safe area by the nearest safe means of egress; also the use of such available fire appliances (including sounding of alarms) as may have been provided for controlling or extinguishing fire and safeguarding of human life" (NBC Part 4, Clause E 8.2.1)

c) The Director Operations of BIAL shall be the overall responsible officer or *Fire Safety Director* with executive responsibility of implementing PTB Evacuation Plan (Fire Safety Plan for PTB).

d) Being the operational custodian and responsible person to coordinate all functions at the Terminal Building, GM Daily Operations or his nominee shall ensure execution of this Fire Safety Plan for PTB in case of a real-time contingency

14.2 PTB EVACUATION SCENARIO

a) The most possible emergency scenarios that might demand evacuation of the PTB are classified in four groups, as listed below:

1. Fire Accidents
2. Earth Quake / Building Collapse
3. Bomb Threat / Bomb Explosion
4. Armed attack

b) There can be a major or minor accident, affecting either a fraction of or the entire Terminal Building. In the former scenario, only a partial evacuation is required, whereas in the latter, the PTB needs to be evacuated completely.

c) Although Bengaluru falls in Seismic Zone III, there can be earthquake at any time. Any damage due to an earthquake depends on its intensity (Modified Mercalli Intensity Scale); an earthquake with magnitude four or more on the Richter scale can damage the PTB as a whole and/or its installations resulting fire. In such scenario a complete evacuation is required.

d) Similarly, bomb explosion or hoax call on bomb explosion as well as terrorist attack can demand a complete evacuation of the Terminal Building.

14.3 EVACUATION ZONES

For a systematic, safe but faster evacuation, [considering the sensitivity and security requirements as recommended by Indian Civil Aviation Authorities], the PTB has been divided in to 03 Zones (Sterile, Non-Sterile & Immune Zones) and 13 Sub Zones (Ref. Table 14a)

a) **STERILE ZONES:** Sterile Zones are those zones where passengers have wide access but limited mobility, either because they have completed every formality required for departure, or because they arrived but not yet cleared formalities. The nearest Exit Routes at these Zones open to airside, which also has procedural feasibility. Occupants at Sterile Zone shall be evacuated only to the Airside via designated exit routes with proper guidance by Sector Commanders

b) **NON STERILE ZONE:** Non-Sterile Zones are those zones where passengers and visitors have wide access and free mobility. The nearest Exit Routes at these Zones open to Landside. Occupants at Non-Sterile Zone shall be evacuated to Landside (except in sub-zone 04, where they are also guided to airside) via designated exit routes with proper guidance by Sector Commanders

c) **IMMUNE ZONES:** Immune Zone has spread across the entire PTB as it consists of staff employed by Airport Operator, a Stakeholder and/or any other Tenant of the building. Evacuation of Immune Zone shall be Self-Guided / Non-Guided, as every staff is expected to be trained/oriented in emergency procedures by the respective Tenant Organization.

d) Experiences in evacuating public areas worldwide has shown that an 'evacuation alert' is often either ignored by the majority of people, or responded with disbelief or creates a panic situation resulting in stampede. To avoid this, each Sub Zones in the Sterile & Non-Sterile Zones, has been placed under Sector Commanders

e) The Operation Executives / Operation Assistants of both Terminal Management and AOCC shall also function as Sector Commanders, vested with "Evacuation Supervisory Duties". Deployment of Sector Commanders in various Sub Zones (Duty Roster) shall be arranged by the Senior Manager Terminal Services as internal orders with a copy to the Duty Terminal Manager & Duty AOCC Manager

f) The Sector Commander shall be empowered in such a way that she/he shall be able to get assistance from any or all staff employed by various Tenants at the PTB, for execution of a safe, systematic and orderly evacuation of the building. All Tenants at the Terminal Building shall provide any or all assistances required by the Sector Commanders for execution of emergency evacuation.

14.4 DECLARING EVACUATION

a) Decision making and declaring of PTB Evacuation, in case of a genuine emergency, (except in case of Bomb threat) shall be the result of a collaborative process by the following Officials, as far as possible:

- Duty Terminal Manager
- Duty Manager or Supervisor ARFF
- Dy Commandant or Shift In-charge CISF

b) Referring to the above Clause 14.4 (a), any of the members shall have power to take decision for evacuation of the Terminal Building during an actual emergency, irrespective of *quorum*,

but exercise of such powers shall be subject to *ex post facto* ratification by the Director operations.

c) Decision for evacuating the Terminal Building due to Bomb Threat or Terrorist Attack shall be taken by the respective authority as specified in the Contingency Plan for Bomb Threat and/or Contingency Plan for Armed Attack, respectively. However, once a decision is taken to evacuate the Terminal Building, the procedures illustrated in this document shall be strictly followed for evacuation

d) Once the decision for a complete / zonal evacuation has been taken, the Terminal Manager shall make parallel arrangements to communicate it to the AOCC Duty Manager by the fastest communication means like Telephone/RT/Mobile phone

14.5 READINESS FOR EVACUATION

In case of a contingency, where there is no alert time available, priority shall be given to evacuate people as early as possible using all available evacuation tools. However, in case there is alert time available, before making any public announcement over PA system or physically executing an emergency evacuation, the SECTORS COMMANDERS under the supervision of the TERMINAL MANAGER shall ensure the following readiness;

a) PTB evacuation has been conceptualized as a "north-South" evacuation. This means, evacuation of any part of the PTB shall be undertaken either to the North direction or to the South depending up on the Sterile and Non-Sterile Concept.
b) Every Escalator and Elevator at the Terminal Building are integrated with Fire Alarm System in such a way that they all would come to a halt in case of any fire. However, ensure that all escalators are at a standstill and elevators are stopped on ground level with its doors kept open before executing an evacuation
c) The sliding doors at various locations such as entry to Check-In hall, exit from Arrival hall and all Boarding Gates on Ground & First Floor are kept wide open
d) The Sector Commanders are positioned at each Sterile & Non Sterile Zones. They shall be equipped with Portable Mega Phones and wearing reflective jackets, if possible
e) The FIDS shall be provided with pre-programmed safety messages; however, and Televisions at the PTB shall be blacked out, so that passenger's attention can be diverted as per situational demand
f) The conveyor belts at both domestic and international baggage claim area shall be switched off. Once evacuation is announced, no passenger shall be allowed to claim any baggage from the belt (Domestic & international), to avoid stampede
g) International departure passengers who have completed emigration but awaiting Security Check shall be evacuated to landside; whereas international arrival passengers who are awaiting customs clearance on Red Channel shall not be allowed to carry any baggage while being evacuated to the landside.
h) Trolley/vehicle movement at BBA and BMA shall be stopped to avoid any accident resulting from collision
i) In case there are aircrafts on contact stands, the PBB operator shall be briefed appropriately to close PBB from the entry point at Rotunda to prevent evacuees entering aircraft
j) In case there are aircrafts on contact stands, the Captain and Crew shall be instructed to stop boarding or disembarking the aircraft. If required the aircraft shall be towed back to a safer distance

k) Vehicle movement on the service road at airside [under the Passenger Boarding Bridges] shall be blocked from the Western and Eastern end of the PTB, so that evacuees can move to assembly points at airside safely
l) Vehicle movement at landside [Inner Curb & Outer Curb] shall be blocked from the entry point itself, so that evacuees can move to assembly points at landside safely
m) Route to the designated assembly points shall be made clear of all obstructions for safe transportation of the evacuees. The Safe Assembly Areas are located on North and South of the PTB
n) In case there is any physically challenged person, special attention shall be given to evacuate him/her before the actual mass evacuation starts. Assistance of the Ground Handling Agents shall also be used to achieve this purpose
o) Once all readiness measures illustrated in Clause 14.5 are ensured, the PA System announcement section shall be directed to make automated public announcement for emergency evacuation

14.6 TOOLS OF EVACUATION

a) WARNING DISSEMINATION:

1. PA system announcement (for zonal or complete evacuation)
2. FIDS monitors (for complete evacuation)
3. Portable mega phones (for zonal or complete evacuation)
4. Mouth to mouth (for zonal evacuation)

b) HUMAN RESOURCES WITH DIRECT ROLE IN EVACUATION:

1. Terminal Manager
2. Sector Commanders (OE/OAs/Immigration/Customs)
3. Apron & AOCC Managers
4. CISF Personnel
5. Ground Handling & Airline Staff
6. ARFF Personnel
7. Concessionaire Staff Based at PTB
8. BIAL Medical Service Personnel
9. Mutual Aid Fire & Police

c) ROUTE INDICATORS/SIGNAGE:

1. Escape Route Marking at the Basement
2. Overhead Emergency Exit signage with UPS Back up
3. Q-Masters on strategic locations
4. Permanent signage at each “ASSEMBLY POINT”
5. Sector Commanders wearing Reflective Jackets

d) LOGISTIC ARRANGEMENTS AT SAFE ASSEMBLY AREAS:

1. Mobile medical care by ARFF at air side (air side ambulances)
2. Mobile medical care at land side (cardiac ambulance)
3. Supply of drinking water/light refreshments, if required
4. Bus transportation from assembly points to safer locations

e) TECHNICAL PREPARATIONS

1. All escalators and elevators are integrated with Fire Alarm System. In case of fire, while all escalators will come to a standstill, all elevates will come to a halt at the ground level with its doors kept open

2. All Overhead signage are supported with uninterrupted power supply so that even in any power failure the exit routes will be visible
3. Basement is provided with Photo luminescent escape route marking, in addition to the overhead signage, so that even in full darkness the occupants can reach fire floor/safer location on ground level
4. Every emergency exit doors are provided with Panic Bars, in such a way that the doors could be open clockwise
5. The Access Control system provided at emergency exit locations has been over powered by Manual Call Points
6. The exit routes are ideally to be in such a way that an individual needs to travel only 30 meters or maximum 2.5 minutes to reach the Emergency Exits.
7. Representative zonal escape route plans (with 'you are hear' specifications) are displayed at each zone to guide passengers to the nearest escape routes
8. Emergency telephone numbers are displayed on various strategic locations

14.7 ACTIONS BY VARIOUS AGENCIES

a) ACTIONS BY ATC

1. In case the ATC gets any hoax call of bomb explosion, terrorist attack or views any fire at the PTB, raise primary alarm through hotline to AOCC & ARFF
2. Once a complete evacuation of the PTB is announced, take appropriate NOTAM in consultation with the AVP & Head Aviation Safety and Manager Airport Operations
3. The WSO shall originate a signal addressing DGCA, Executive Director AAI (ATM), and Director-Air Safety giving the FIR

b) ACTIONS BY DUTY MANAGER AOCC

1. In case of Terminal Evacuation, raise secondary alert as per the "SOP for Operation of Emergency Alert System"
2. Arrange for play of text messages regarding evacuation guidelines on FIDS and TV at the PTB, if possible, or else black-out the FIDS/TV
3. Act as Sector Commander of "AOCC (Sub Zone 05) and prompt/assist all occupants to vacate the building as fast as possible.
4. Designate all OE/OAs with AOCC to assist the Terminal Manager and Sector Commanders for a systematic, safe and orderly evacuation of the passengers from the PTB

c) ACTIONS BY SECTOR COMMANDERS

1. Coordinate with Terminal Manager to ensure that all readiness measures listed in Clause 14.5 of the Fire Safety Plan for PTB have been completed before starting actual evacuation
2. Arrange for systematic, safe and orderly evacuation of all occupants of the Terminal Building.
3. Arrange for medical/refreshment facilities at the assembly points, if the evacuees need to remain at the assembly points for more than 30 minutes.
4. Once evacuation has been completed and the perceiving threat is under control, retain/withdrew all readiness measures taken at the PTB before evacuation

d) ACTIONS BY TERMINAL MANAGER

1. Instruct Sector Commanders to ensure that all readiness measures listed in Clause 14.5 of the Fire Safety Plan for PTB have been completed before starting actual evacuation
2. Arrange for systematic, safe and orderly evacuation of all occupants of the Terminal Building.
3. Give special attention to safeguard the baggage of every passenger, who left it at the PTB during evacuation. Once passengers are taken back to the PTB, judiciously manage claim of baggage by each passenger
4. Once the PTB has been evacuated completely, coordinate with Duty Manager ICT Infrastructure to activate ACS at the earliest, if possible from a remote location
5. Arrange for medical/refreshment facilities at the assembly points, if the evacuees need to remain at the assembly points for more than 30 minutes.
6. Coordinate with the GHA to transport the evacuated passengers to a safer locations, as decided by the Emergency Coordinator
7. Once evacuation has been completed and the perceiving threat is under control, retain/withdrew all readiness measures taken at the PTB before evacuation
8. Once the emergency is stabilized, file a detailed report of the emergency evacuation carried out to the following:
    i. Director Operation
    ii. AVP & Head Aviation Safety
    iii. GM Daily Operations
    iv. AGM Emergency & BCM / BCM Coordinator

e) ACTIONS BY APRON MANAGER

1. Ensure that the "ASSEMBLY POINTS" at airside are clear of obstructions and signage are visible
2. Block vehicle movement on service road [under the PBB] from both East & West sides of the PTB
3. Coordinate with Airlines and ground handlers to tow back the aircraft from the contact stand, if necessary
4. Coordinate with and assist the ARFF personnel to provide medical care to the evacuees at the "assembly points", if required
5. Coordinate with the Terminal Manager and the GHA to transport the evacuated passengers at airside to a safer location as decided by the Emergency Coordinator.

f) ACTIONS BY ARFF

1. The Senior Most ARFF Person, present at the PTB, shall size up the situation and report to the ARFF Watch Tower for deploying adequate number of additional personnel and equipment.
2. The Duty Manager ARFF shall advise the Terminal Manager regarding the requirement of a complete evacuation of the PTB and assist him/her to take appropriate decision.
3. If a complete building evacuation is required, dispatch appropriate number of CFTs depending upon the situation and declare ARFF category accordingly.
4. Dispatch 1 CFT and 1 ambulance, in case of a partial evacuation of the PTB
5. Undertake fire fighting and rescue operations, if the situation demands to do so

6. Once evacuation is visibly complete, as far as possible, ARFF Technicians shall conduct a cross check to ensure that no one is trapped inside the building
7. Once Mutual Aid Fire Service arrived, handover the command of fire fighting operations, and assist them to stabilize situation
8. Provide adequate medical support to the evacuees at the airside assembly points using airside ambulances

g) ACTIONS BY SHIFT INCHARGE, CISF

1. Provide adequate security to ensure that the passengers at landside (nonsterile area) are not entering the airside (sterile zone) and vice versa to reach the assembly points, unless stated otherwise.
2. Once complete evacuation is announced, stop entry of the passengers/staff to the Terminal Building, except the Fire Fighting Personnel & rescue team
3. Stop the press/media entering in to the PTB for reporting and photography
4. Deploy adequate number of security personnel to assist Sector Commanders for evacuating passengers from the PTB
5. During Evacuation, the CISF shall try to ensure that no one is trapped inside the building and no anti-social activities like, stealing, pilferage etc occurs with the valuables left unattended. CISF Personnel at the peripheral exits of the PTB shall be the last ones to leave the building

h) ACTIONS BY DUTY MEDICAL OFFICER

1. Evacuate passengers and staffs undergoing treatment at MI Room in the Terminal Building , if any
2. Provide support to airside ambulances for medical assistance at the airside assembly points
3. Provide adequate medical support at the landside assembly points using the Cardiac Van.
4. Inform own back up hospital at Hebbal to arrange for Panel Hospitals, Doctors and medical supply, ambulances etc if required.
5. Transport the injured passengers, if any, to the designated hospital for treatment; Maintain record of all passengers and staff transported to various hospitals

i) ACTIONS BY AIRPORT POLICE

1. Assist the Terminal Manager for traffic management at the designated assembly points at landside.
2. Take action to stop vehicle inflow to the drop-up zone from the access road.
3. Take lead role in maintaining law and order situation at the airport premises
4. Provide protection to the evacuated passengers at the land side assembly points
5. Prevent the press / media from entering the PTB for reporting or photography of the evacuation

j) ACTIONS BY GROUND HANDLERS

1. Transport evacuees at the airside assembly points to a safer location as directed by the Terminal Manager
2. The GHA staff working at PTB shall assist the Sector Commanders for evacuating passengers to the assembly points.

k) ACTIONS BY DUTY SAFETY AUDITOR

1. Ensure that photographs of the evacuation are taken and log of events are maintained
2. Assist the Apron Manager in airside preparedness for carry out evacuation
3. Assist the Medical Coordinator to maintain lists of all injured personnel as well as the name of hospitals to which they have been transported for treatment.
4. Carry out initial investigations and take necessary actions to preserve evidence.

l) ACTIONS BY GM, CORPORATE COMMUNICATION

1. Coordinate with Terminal Manager to prepare press/media release and inform the official spokesperson of BIAL to address the press/media, if required
2. Activate the media room and press/media briefing, if required

Section – 15

Bengaluru International Airport Ltd
Devanahalli Taluq

Airport Emergency Plan

Public Health Emergencies
(COMMUNICABLE DISEASE MANAGEMENT)
(Extract of Chapter No.15 of Aerodrome Emergency Plan Ver. 4)

Source

- Document Name : BIAL - PLA-BCMS-Aerodrome Emergency Plan
- Document Version Number : 4
- Document Classification : Restricted
- Document Approved By : DGCA, New Delhi
- Document First Published : 31-08-2007
- Document Revision Date : 31-01-2012

15.0 PUBLIC HEALTH EMERGENCIES (COMMUNICABLE DESEASE MANAGEMENT)

Public Health Emergency is defined as an occurrence or imminent threat of an illness or health condition that is believed to be caused by bioterrorism, appearance of a novel or previously controlled or eradicated infectious agent or biological toxin that possess high probability of harms viz. large number of death in the affected population, large number of long term or permanent disability among the affected population, and/or wide spread exposure to an infectious or toxic agent resulting significant risk to a future harm of a large number of people in the affected population (*Courtesy. John Hopkins University/CDC*)

Example of Public Health Emergencies are increased risk of travellers or cargo spreading a serious communicable disease internationally through air transport and severe outbreak of a communicable disease potentially affecting a large portion of aerodrome staff *(Ref. Amendment 10 of ICAO Annex 14 Vol.1)*

A. In case of outbreak of any public health emergency at Bengaluru International Airport, the Directorate of Health [GoK] shall take lead in responding to the situation under the direct guidance of the Ministry of Health, GoK
B. The Airport Medical Service provider shall assist the Public Health Department (Airport Health Organization-APHO) in tackling the situation, as far as possible, on request
C. Airport Operator shall provide all possible support to the APHO to tackle the emerging scenario and preparedness actions shall be initiated to arrest further spread of the disease
D. In case of spread of any communicable disease at the airport, the passengers diagnosed positive shall be quarantined by the APHO, either at the airport or in hospitals where quarantine facility available
E. The Cargo Terminals at the airport shall be provided with adequate facility to take care of animal quarantine; health screeners & veterinary specialists shall be posted from the Department of Health [APHO]
F. Sufficient precautions shall be taken up by the Terminal Management to check spread of the diseases which may include cleaning the involved area, isolation of passengers, burning contaminated materials as far as possible
G. On receipt of a "Medical Emergency Alert" from aircraft in flight, ATC shall approve emergency landing of the aircraft, with NO.1 PRIORITY; ATC shall pass on the "Medical Emergency" alert to ARFF/AOCC through Hot Line/RT/Telephone with following details:
    1. Name and number of the aircraft
    2. Type of aircraft and call sign
    3. Expected time of arrival
    4. Number of persons affected
    5. Nature of disease/symptom, if known
H. On receipt of the primary alert from ATC, the AOCC shall generate secondary alert as per the "SOP for Operation of Emergency Alert System"
I. In case International Passengers involved, the Airline representative shall coordinate with Immigration & Customs to complete required formalities and clear the involved passengers

J. In case of any death of Passenger at the Aircraft, the Airline representative shall coordinate with APHO to complete all required formalities as per procedures
K. In case of any death of Passenger at the Terminal Building, the Airline representative in association with the Terminal Manager shall coordinate with Airport Police, Immigration, and APHO to complete formalities as per procedures
L. The APHO shall appraise the State/District Health Authorities to mobilise and despatch adequate number of medical practitioners, paramedics, medical supply and ambulances to the airport
M. In case of communicable disease reported, the airport operator and all other stakeholder organizations involved in the affected area shall ensure that their staff are undergone compulsory medical screening. All precautionary measures shall be taken up to ensure safety of the personnel

Source : Bengaluru International Airport Ltd; Aerodrome Emergency Plan Version 4.0, Revised on January 31, 2012; Emergency & Business Continuity Management, © BIAL

Annexure -1

DETAILS OF OFFICERS OF DCG AND THE RESPONDERS

(LISTED BY FACTORIES & BOILERS DIVISION – 2)

Sl. No.	Designation	Phone No.	
		Off.	Mobile
1	Deputy Commissioner, Bengaluru Rural District	22867221	94492 65999
2	Additional Deputy Commissioner, Bengaluru Rural District.	22860412	94800 83556
3	Supdt. Of Police, Bengaluru Rural District.	22264350	
4	Executive Engineer, PWD/ZP, Bengaluru Rural	22371823	
5	District Comdt. Of Home Guards.	23142542	
6	Chief Fire Officer, Bengaluru West	22971523	
7	Chief Fire Officer, Bengaluru East	22971513	
8	District Information Officer, Bengaluru rural	22028062	
9	Dist. Health Officer , Bengaluru Rural Dist.	22876586	
10	Joint Director Agriculture, Bengaluru Rural	26711594	
11	RTO, KR Puram	25617951	
12	RTO, Nelamangala	7726886	
13	ARTO, Yeshwanthapur	27681999	
14	Executive Engineer, BESCOM, Yelahanka Sub Dn.	28565822	
15	Executive Engineer, BESCOM, Nelamangala Sub Dn.	27725585	
16	Executive Engineer, PWD	22371823	
17	Secretary, NSC, Karnataka Chapter	22867996	
18	Dy. Director of Factories, Bengaluru Division-2	26531206	---

Annexure -2

DETAILS OF FIRE STATION
(LISTED BY FACTORIES & BOILERS DIVISION – 2)

Sl No.	Name of the Fire Station	Telephone
1	2	3
1	Fire	101
2	Banashankari Fire Station	22971539
3	Banaswadi Fire Station	22971540
4	Hebbal Fire Station	22971542
5	High ground Fire Station	22971537
6	Jayanagar Fire Station	2297538
7	Mahadevapura Fire Station	22971541
8	Mysore Road Fire Station	22971536
9	Peenya Fire Station	22971545
10	Rajajinagar Fire Station	22971543
11	Yeshwanthpur Fire station	22971544

ANNEXURE- 3

DETAILS OF AMBULANCE
(LISTED BY FACTORIES & BOILERS DIVISION – 2)

Sl.No	Name of the Hospital	Phone No.
1.	Ambulance	102/22975829
2.	Apollo Hospital	1066
3.	CTC – Sanjeevini	1062/25301818
4.	AAA Emergency Services	25572817
5.	BGS Global Hospital	24242424
6.	Bengaluru Baptist Hospital	23330322
7.	Bengaluru Hospital	26562753
8.	Bowring and Lady Curzon Hospital	25591362
9.	Chinmaya Mission Hospital	25280461
10.	DG Hospital	26696810
11.	Dr.BR Ambedkar Medical College Hospital	25465860
12.	HOSMAT	25593796
13.	MS Ramaiah Memorial Hospital	23608888
14.	Mallya Hospital	22242325
15.	Manipal Hospital	25211200
16	NarayanaHrudalaya	22152215
17	Vydehi Institute of Medical Sciences and Research Centre	28413382
18	Victoria Hospital	26701150
19	Wockhardt Hospital	22261037
20	Yellamma Dasappa Hospital	22225663

Annexure- 4

LIST OF BLOOD BANKS IN BENGALURU CITY (LISTED BY FACTORIES & BOILERS DIVISION – 2)

Sl. No.	Particulars	Phone Nos.
1	Akshaya Voluntary Blood Block	23147303
2	Bengaluru Baptist Hospital	22024700
3	Bengaluru Hospital	26562753
4	BGS Global Hospital	26255555
5	Harsha Hospital	7723959/772
6	HOSMAT	25543746
7	Indian Red Cross Society	22268435
8	Jayadeva Institute of Cardiology	22977213
9	KIMS Hospital	26673056
10	MS Ramaiah Memorial Hospital	25024224
12	Narayana Hrudayalaya	22152215
13	Sagar Hospital	26536700
14	Victoria Hospital	26701150
15	Vydehi Blood Bank	28413381

ANNEXURE - 5

DETAILS OF MEDICAL SHOPS KEPT OPEN FOR 24 HOURS AND MAJOR CHEMISTS AND DRUGGISTS.

(LISTED BY FACTORIES & BOILERS DIVISION – 2)

Sl. No.	Particulars	Telephone Nos.
1	Agadi Hospital	22222925
2	Apollo Pharmacy	22957417
3	Chinmaya Mission Hospital	28580461
4	HOSMOT	25543746
5	KIMS Hospital	26673056
6	MS Ramaiah Memorial Hospital	23608888
7	Mallya Hospital	22277979
8	Manipal Hospital	25023247
9	Ramakrishna Hospital Private Limited	26633143
10	Sagar Hospital	26536700
12	Vydehi Pharmacy	28413381
13	Yellamma Dasappa Hospital	22225642

ANNEXURE –6

RESCUE SHELTERS CUM RALLYING POST

(LISTED BY FACTORIES & BOILERS DIVISION – 2)

SL. No.	Name of the Industry	Rallying post-cum rescue shelter	Maximum no. of Persons can be accommodated	Sanitation / lighting
1.	HPCL Devanagonthi.	• Higher Primary School, Makanahalli.	50	Yes
2	BPCL Devanagonthi.	• Govt., Primary School, Kanekal	25	Yes
3	IOCL Devanagonthi.	• Govt., Higher Primary School, Vagata. • Govt., higher school, Devalapur.	50 100	Yes Yes
4	Bell Ceramics, Hosakote, Industrial, Area	• Govt., school, Doddahollur. Hosakote Taluk.	100	Yes
5	Indo Gas, Budihal Village	• Saptapadi, kalyana mantapa, Nelamangala.	200	Yes
6	Asia LPG Pvt Ltd, Budihal Village	• Govt., junior college, Nelamangala.	500	Yes
7	Jyothi Gas Pvt Ltd, Kachanahalli	• Gopivenkatesh Kalyana Mantapa, Nelamangala.	1000	Yes
8	Kwality Gas Corporation, Geddanahalli	• Sapthagiri Choultry, Nelamangala,	700	Yes

		kunigal circle		
9	Rittal India Pvt. Ltd., KIADB Industrial Estate, Doddaballapur.	• Junior College, • Gururaj Kalyana Mantapa. • Govt., primary School, Basettahalli	500 1000 250	Yes Yes yes
10	Sneha Petroleum. Kottanahalli. Nelamangala	• Basavanna devara mutt. Sondekoppa road. • Govt., higher primary school.	500 250	Yes yes
11	IOCL LPG Bottling Plant. Devanagonthi. Hosakote Taluk. Bengaluru.	• Govt., Higher Primary School. Vagata. • Govt., higher school. Devalapur	50 50	Yes yes
13	Universal petroleum corporation Nelamangala	• Basavanna devara mutt. Sondekoppa road. • Govt., higher primary school	500 250	Yes Yes

Annexure -7

MATERIAL SAFETY DATA SHEET (MSDS) OF LPG

LPG is the abbreviation of "**L**iquefied **P**etroleum **G**as". The term is used to describe a variety of hydrocarbons, which exists vapors under ambient conditions of temperature and pressure, but can be liquefied by the application of pressure.

Saturated hydrocarbons in the form of Propane (C_6H_6) and Butane (C_6H_{10}) constitute the bulk of commercially available LPG.

The source of LPG can be either natural gas liquids or crude petroleum oils. LPG is used as a fuel for heating, cooking, cutting and welding, industrial heating, internal combustion engines and feed material for petro-chemical products.

Important Properties of LPG are as follows:

Physical		Commercial Butane	Commercial Propane
Relative Density (to water) of liquid at 15.6^0 C.		0.57 – 0.58	0.59 – 0.51
Liters / Ton of Liquid at 15.6^0 C.		1723 – 1760	1957 – 2019
Relative Density (to air) of vapour at 15.6^0 C and 1015.9 m bar.		1.90 – 2.10	1.40 – 1.55
Ratio of gas to liquid volume at 15.6^0 C and 1015.9 m bar.		233	274
Boiling Point ^{0}C		-2	-45
Vapour Pressure at 2^0 C bar.		2.5	9
At 50^0 C	Psig	40	130
	Bar	7	19.6
	Psig	100	283
Lower Limit of Flammability % v/v		1.8	2.2
Upper Limit of Flammability % v/v		9.0	10.0

ANNEXURE – 8

DETAILS OF HEAVY EARTHMOVING EQUIPMENT / VEHICLES

Sl. No.	Name of Company	Telephone No.
1	Armsel MHE Private limited,	25530439
2	AS crane Services	25653515
3	Industrial Hoisting Services	25730388
4	Vaiking Crane Services	26560533
5	Bagyalakshmi Crane Services	23480280/94483 81280
6	Kollur Enterprises	23459129
7	Sigma Crane Private Limited	23484158
8	Sri Shakti Cranes	23484158
9	Sudhir Cranes Private Limited,	25585410
10	D'souza Cranes	23386632
11	Kumaresh Cranes	9845007516
12	Volvo construction equipment Division	

Annexure – 9

METEOROLOGICAL AND SEISMIC DATA

The meteorological and Seismic Data should be collected from the Central Observatory, Meteorological Department, Bengaluru.

The data collected is for

a) Relative Humidity at 0830 Hrs. and 1730 Hrs.
b) Mean wind speed in Kmph.
c) Wind Direction.
d) Monthly total rainfall in mm.

The summarized information in the form of monthly average value is as follows:

Month	**Relative Humidity @ 1730 Hrs.**	**Mean Wind Speed in Kmph.**	**Wind Direction**	**Monthly Total Rainfall in mm.**
January	35	11.00	NE	11.20
February	28	11.50	NE	9.00
March	22	12.00	N	5.90
April	19	13.10	N	3.60
May	19	16.50	NW	9.90
June	33	17.80	NW	51.30
July	62	16.20	NW	182.10
August	71	12.40	NW	180.70
September	57	12.30	NW	85.20
October	32	10.00	NE	9.90
November	30	7.60	NE	1.90
December	35	8.10	NE	5.70
Annual	37	12.40	SE	556.40
Average			NW	

E – Eastern
W – Western
SE – South Eastern
SW – South Western
NE – North Eastern
ENE – East North Eastern
ESE – East South Eastern

Annexure – 10

RECOMMENDATIONS
(FACTORIES & BOILERS DIVISION – 2)

1. A hot line between the MAH units and the Control Room is recommended for immediate and effective communication.

2. The road connecting NH4 of Hoskote and Devanagonthi Oil industry installations needs to be widened and upgraded in view of the traffic density.

3. The road connecting from highway to the plants shall be widened and asphalted for safe movement of loaded LPG and POL tankers

4. The movement of the LPG tankers in the existing roads leading to the industries from the highways shall be regulated. The drivers shall be trained on sustained basis.

5. Fly over or cross bridge shall be provided on the railway line leading to Devangonthi Railway station from Whitefield station to see that vehicular traffic during emergency should not be stranded due to railway traffic.

6. Periodical training programmes shall be conducted to create awareness to the responders.

7. Mock rehearsals/ dry drills shall be conducted once in six months to evaluate the strength and weaknesses of the plans envisaged.

Annexure – 12

Details of voluntary organisations

Sl. No.	Name of the Organisation
1	International Resource Development Centre, (NGO) Survey No.184, Kembliganahalli, Nandagudi, Hoskote (TQ) M: 98450 42522
2	Hombelaku Seva sanga. Kodigenahalli, Doddaballapur, E. Vishwanath(secretary), Phone no. 76- 23878.
3	Grameena Abyudaya Seva Sanga, 4th ward, Egipura, Dodda Ballapur, Venkatakrishna, Phone no. 3220863, 118, 9th cross, Adarshanagar, West of chord road, Basaveswara Nagar.
4.	Jyothi Day Care Centre, Hosakote tower, Hosakote, Phone no.79-33095
5	Sanklapur, Hosakote, Phone no.79-31493
6	Al –Ameen Education Society, Malur road, Hosakote.
7	Nirmala Sevashrama, Katamnellur, Hosakote Taluk.
8	Rotary Club, Near rural Police station, Ramanagar taluk., Sreenivasamurthy, Secretary, Phone no. 72-71728
9	Maya, Souh Block, Mr.Alex, Secretary, Phone no.6658134.
10	Voices, Millers road, Benson Town, Sucharitha Eswar, Phone no. 5546564.
11	Bengaluru Medical Services Trust, Dr. Latha Jagannathan,Phone no.5293486
12	Trinity Charitable Association, No. 42/4, Marathhalli, Bengaluru, K M Cherian,
13	SWAPLAP, No.234,IV Main, Vivek nagar Layout, Masila Mani,57137559

Annexure - 13

Details of Life Saving Equipments and other services/facilities available in Bengaluru Rural District.

Sl.No	Item No & Resource Name	Doddaballapura	Devanahally	Hosakote	Nelamangala	Total
1	Anti-Snake Venom	68 Vials	33 Vials	60 Vials	30 Vials	191 Vials
2	Halogen Tablets	-	-	-	-	-
3	Bronchodilators	480 Units	390 Units	410 Units	370 Units	1650 Units
4	Vaccines	Supplied	Supplied	Supplied	Supplied	-
5	Chlorine Tablets	-	-	-	-	
6	General Physician	1	1	1	1	4
7	Trauma Specialist	-	-	-	1	1
8	Surgeon	-	-	-	1	1
9	Anesthetist	-	-	-	1	1
10	Gynecologist	1	1	1	1	4
11	Radiologist	-	-	-	-	-
12	Paramedics	71	59	61	72	263
13	Lab Technicians	10	8	8	6	32
14	OT Asst	1	1	1	1	4
15	Medical First Responders	1	1	1	1	4

ANNEXURE – 14

(A) Taluka wise Detail of C.H.C., P.H.C, and Sub centres in the District.

Sl.No	Taluka	Name of C.H.C	Name of P.H.C	Name of Sub Centres
1	**Devanahalli**	**Vijayapura**	1. Kundana	Nallur-A
			2. Nallur	Nallur-B
			3. Avathi	Bettakote
			4. C.R.Patna	Channahally
			5. Aredeshally	Anneswara
			6. Koira	Budigere-A
			7. Karahally	Budigere-B
			8. Sadahally	
			9.Godlumunddenahally	Kundana
			10. Budigere	Bommavara
				Kannamangla
				Devanahally-A
				Devanahally-B
				Devanahally-C
				Devanahally-D
				Devanahally-E
				Koira
				Jyothipura
				Alurduddanahlly
				Vishwanthapura
				Avathi-A
				Avathi-B
				Harohally
				G.M.Hally-A
				G.M.Hally-B
				Chikkanahally
				Karahally
				Bidalur
				Maligenahally
				V.K.Kote
				Channarayapatna
				Ibasapura
				Yaliyur
				Chikkatattamangala
				Viajaypura-A
				Viajaypura-B
				Viajaypura-C
				Viajaypura-D
				Viajaypura-E

				Aradeshanahalli
				Jalige
				Hegganahalli
				Sadanahalli
				Uganavadi
2	**Hosakote**		1.Jadigenahalli	Sulibele-A
			2. Sulibele	Sulibele-B
			3. Anugondanahally	Yanagunte
			4. Nandagudi	Hsaigala
			5. Khajihosahally	Lakkondahally
			6. Bylanarasapura	Kumbalahally
			7. K.Mallasandra	Nandagudi-A
			8. Mugabala	Nandagudi-B
			9. Bendiganahally	Hindiganala
			10. Mutsandra	Anupahally
				N.Hosahally
				Nagrenahalli
				Bendiganahally – A
				Bendiganahally – B
				Mugabala
				Chikkanahally
				Nidaghatta
				Chikkahullur
				Begur
				K.Satyavara
				Anugondanahlli
				Muthkur
				K.K.Agrahara
				Gundur
				Muthkur
				K.K.Agrahara
				Gundur
				Muthsandra
				Harohally
				Bylanarasapura
				Tavarekere
				Hedakanahlli
				Nelavagilu
				Shivanahapura
				Kambaliganahalli
				K.Mallasandra-A
				K.Mallasandra-B
				Hosakote-A
				Hosakote-B
				Hosakote-C

				Hosakote-D
				Paramanahalli
				Dunnasandra
				Devanagundi
				Sametanahalli
				Makanahalli
				Jadigenahally-A
				Jadigenahally-B
				Doddadenahally
				Kattigenahally
				Vagata
				Doddagattiganabbi
3	**D.B.Pura**		1. Kanasavadi	Aralumallige
			2. Tubagere	Kasbag
			3.Doddahejjai	Kodigehally
			4.Konenahallty	D.B.Pur-Part-A
			5.Koneghatta	D.B.Pur-Part-B
			6.Hulikunte	D.B.Pur-Part-C
			7.Doddatumkur	D.B.Pur-Part-D
			8.Ghatisubramanya	D.B.Pur-Part-E
			9.G.Hosahally	Doddatumkur-A
			10.Melkote	Doddatumkur-B
			11.Marlenahally	Bashettahally
			12.Kadnur	Byrasandra
			13.Sasalu	Thippapura
			14.Arudi	Doddahejjaji-A
			15.Halenahally	Doddahejjaji-B
			16.Kammasandra	Doddabelavangala
			17.Arudi	Hanabe
			18. Halenahally	Hulikunte
			19.Kammasandra	Bhktarahalli
				Ambalagere
				Kanasavadi-A
				Kanasavadi-B
				Madure
				Istur
				Kadnur-A
				Kadnur-B
				Kannamangala
				G.Hosahally-A
				G.Hosahally-B
				Gundamgere
				Tippur
				Arudi-A
				Arudi-B
				Sakkaregollahally

				Sasalu
				Kankerehally
				Channaveerenahally
				Koneghatta
				Linganahally
				Shivapura
				Rajaghatta
				Tubagere-A
				Tubagere-B
				Lakshmidevipura
				Gantiganahally
				Heggadenahalli
				Melekote-A
				Melekote-B
				Lakshmidevipura
				Gantiganahally
				Heggadehalli
				Melekote-A
				Melekote-B
				S.S.Ghati-A
				S.S.Ghati-B
				Hondanahally
				Vaddarahally
				Antharahally
				Nelkunte
4	**Nelamangala**	Thyamagondlu	1. Dobbaspet (Maternity)	Nelamangala-A
			2. Thyamagondlu	Nelamangala-B
			3. Shivagange	Nelamangala-C
			4.Thadasighatta	Nelamangala-D
			5.Margondahally	Nelamangala-E
			6.Yelekethanahally	Nelamangala-F
			7.Manne	Arasinakunte
			8.Hasurvally	Mallarabanavadi
			9.Modalkote	Soladevanahlly
				Honnasandra
				Bhodihal
				Mylanahally
				Islampura
				Mahadevapura
				Yelechegere
				Modalkote-A
				Modalkote-B
				Shivagange-A
				Shivagange-B
				Honnenahally
				Kamalapura

				Thyamagondlu-A
				Thyamagondlu-B
				Thyamagondlu-C
				Thyamagondlu-Rural
				Jakkanahally
				Kuntabommanahally
				Baragur
				Manne-A
				Manne-B
				Dobbaspet-A
				Dobbaspet-B
				Devarahoshally
				Thattekere
				Narasipura
				Yelekethanahally-A
				Yelekethanahally-B
				Doddabele
				Isuvanahally
				Obalapura
				Mavinakunte
				Hasiruvally-A
				Hasiruvally-B
				Madigere
				Maragondanahalli
				Kuluvanahally
				Arebommanahally
				Kambal
				Kerekatteganur
				T.Begur

ANNEXURE – 15

Detail of Allopathic Dispensaries of District:

Sl.No.	Location of Allopathic Dispensaries	Doddaballapura	Devanahally	Hosakote	Nelamangala
1	Other than ANM	10	9	8	15
2	Physiotherapist	-	-	-	-
3	E.N.T. Specialist	-	-	-	-
4	Eye Specialist	1	-	-	-
5	Child Specialist	1	1	-	1
6	Dentist	1	2	1	1
7	Orthopedic	-	-	-	1

ANNEXURE - 16

Details of Ambulance service available in District (Taluka Wise):

Sl.No.	Taluka	Name of Office	No. of Ambulance	Contact No.
1	Devanahally	Taluk Hospital	1	
2	Hosakote	Taluk Hospital	1	
3	Doddaballapura	Taluk Hospital	4	
4	Nelamangala	Taluk Hospital	3	
	Total		**9**	

ANNEXURE - 17

Details of EMRI – 108 Ambulance services available in District (Taluka Wise)

Sl.No.	Segment Name	Contact No.	Address / Location.
1	Devanahally	108	CHC Vijayapura, PHC Avathi PHC Budigere
2	Hosakote	108	Tq Hospital Hoskote PHC Nandagudi PHC Anugondanahally
3	Doddaballapura	108	TQ-Hospital D.B.Pura, PHC S.S. Ghati PHC Doddabelavangala
4	Nelamangala	108	Tq-Hospital Nelamangala PHC Dabaspet PHC Thyamagondlu

Annexure – 18

MAP Showing Administrative Boundary and Network

Phone Numbers List

Sl. No.	Name of the Officer and Designation Sriyuthas	Office No & Fax No.	Mobile
1	S.Palaiah Deputy Commissioner	22867221 22860220(F)	94492 65999
2	A.M.Yogesh Additional Deputy Commissioner	22860412	9449679294
3	M.K. Jagadeesh Assistant Commissioner, Doddaballapur Sub Division	27622037	97405 39668
4	Bharathi Office Assistant	22865512	96206 10264
5	Rajeevalochana Election Tahsildar	22868086	97409 17237
6	K. Padma Muzarai Assistant	22863225	98457 16687
7	Bhavana District Project Director. SJSRY DUDC Sayeeda - 81476 65614 (Bhoori-9535999667 AEE Reg-Lokayuktha) Shivlinge Gowda, EE- 9902659539 DMA Office-22866302	22862850	99020 69840
7a	Manjunath AEE		94805 19009
7b	Shivalingaiah Executive Engineer		98802 81757
8	Girijadevi Deputy Director, (Food) Nalini, Accounts Officer-9844284675 Nagaraj Food Safety Officer-9731211969 Commissioner, Food & Civil Supplies-22262187(o) Sri. Anbukumar, IAS, 9449892000 Harsha Gupta, Secretary,	22864452	99003 99145

	22259024,(O) (M) 9448145670		

9	Udaya Shankar Project Director, Child Labour	22867844	99803 33531
10	Rajeshwari RHA		98807 08889
10a	Lakshmi, Tahsildar Grade-2, Vinivink		96632 40958
11	R.V. Manjunath JHM		94486 68385 89041 12088
12	Vijayakumar RHM		94486 70042
13	Padmaraj Election Sheristedar		81052 27207
14	Shashikala Y.R. Municiple Tahsildar	22862850	82776 48769
15	B.K.Chandramouleshwara Asst. Director N.S.A.P (Statastics)	22867007	99023 88500
16	R. Raju Legal Advisor K.M.Chinnamma- 98455 22859 Legal Aid Council		9845559718
17	K. Padma Asst.Commissioner, (I/C) Muzrai. Omkarappa, Manager	22867446	98457 16687 95913 13906
18	Bheema Nayak (I/C) Special Land Acquisition Officer(Railways) Shashikumar - 97385 26499 Sathyaprakash- 98805 65860 Surveyor Vidya, FDA-9663668880	22860219	98452 25136
19	Venkatesh GIZ Co-ordinator		99868 96099

20	Chetan. K. Record Keeper		89712 22802
21	K.M.Chinnamma Advocate & Legal aid Council for Bangalore Rural Dist.		98455 22859
22	Prabhakar R. Census, Dept.		94499 59957

Assistant Commissioner Doddaballapur Sub Division			
1	M.K.Jagadeesh Assistant Commissioner, Doddaballapur Sub Division	27622037	97405 39668
2	Narasimhappa, Manager,		94802 34168
3	Mahesh, FDA- 9738432992		99020 60221
4	Naveen, FDA		98442 60808
5	AC- Driver- 99643 93209		

DODDABALLAPURA TALUK			
1	Ramesh M.K. Tahsildar	27622033 (Off & Fax)	98450 09153
2	Ramalingaiah Grade-2 Tahsildar		98453 86258
3	Devraj B.K. R.R.Sheristhedar		96115 03677
4	Ramesh, Social Security Sheristedar		
5	Narayana Swamy Election Sherestedar		94486 63066
6	Tulasi Ramaiah Deputy Tahsildar (I/C)	Doddabelavangala Hobli	94495 01925
7	Ramesh Deputy Tahsildar (I/c)	Tubagere Hobli	
8	Rangaraj Deputy Tahsildar	Sasalu Hobli	96119 80085
9	RavishankarA. RI	Kasaba-1	80505 43175
10	Anasuyamma, RI	Kasaba-1	96114 29105
11	Girish, RI	Tubagere	99456 28175
12	Naganna, RI	Doddabelavangala-1	99000 85388
13	Tulasiramaiah, RI	Doddabelavangala-2	94495 01925
14	Gopalakrishna, RI	Sasalu-1	96320 44120

15	Gopalakrishna, RI (/C) Gopalakrishna,	Sasalu-2	94485 32824
16	Muniramaiah	Madhure Hobli	99452 81999
17	Ramanjini, FDA		97415 27374
18	Samuel J. FDA		99455 90519
19	Chandrashekar M.S.		97432 24328
20	B.K.Upendrakumar		81399 99666
21	Chandrappa, Tahsildar Driver- 84537 08353		

DEVANAHALLI TALUK			
1	Keshavamurthy, Tahsildar (Vasu, Driver-94482 32908)	27682238 27682232(O) 27682109(F)	98440 94497
2	S. Ajit Kumar Rai Tahsildar Grade-2		**98456 00018** 94490 95016
3	N.A.K. Honnappa, R.R. Sherestedar		99165 25689
4	Annappa Social Security Sheristedar		89718 70549
5	V.S. Raghavendra Election Sheristedar		94489 18895
6	Nagaraj, Food Sheristedar,		98451 82143
7	Raveendra Deputy Tahsildar,	Kundana Hobli	94803 31096
8	Muttugappa Deputy Tahsildar	Channaraya pattana Hobli	95382 05759
9	Uday Kumar (I/C) Deputy Tahsildar	Vijayapur Hobli	93412 04029
10	B. Venugopal, RI,	Channarayapatna-1 Hobli	94482 08123
11	V.Chidananda, RI,	Channarayapatna-2 Hobli	98457 34876 94830 33232
12	Chandrashekar, RI	Kasaba Hobli-1	99729 31589
13	Jagadeesh, RI	Kasaba Hobli-2	88842 44839
14	Ramesh, RI	Vijayapura-1	99014 91398
15	Udaykumar, RI	Vijayapura-2	93412 04029
16	N.P.Raju, RI,	Kunadana Hobli	89710 00952

HOSAKOTE TALUK			
1	Nandini P.M. Tahsildar	27931237 27931682(F)	94833 75998
2	B.B. Chandrashekar Tah Grade-2		98455 51572
3.	D. Narayanappa, SSY Sheristedar		99028 11331
4	Venkatesh, RR Sheristedar		98861 93942
5	Goutham K, Deputy Tahsildar	Nandagudi Hobli	99166 99454
6	Nagaraj Deputy Tahsildar	Anugondahalli Hobli	94489 84924
7	Goutham Deputy Tahsildar	Jadigenahalli Hobli	98455 22859
8	Jabiulla Deputy Tahsildar	Sulibele	96200 29730
9	Sathyanarayana RI	Kasaba-1	97401 68188
10	Anjinamma. RI	Nandagudi 2	73538 09978
11	Manjunath R I	Sulibele	99729 31589
12	Prakash, RI	Nandagudi Hobli-1	99451 94281
13	B.Prakash RI	Jadigenahalli	96206 20102
14	Chandraprakash, RI	Jadigenahalli	99008 42106
15	Rajinikanth Reddy, RI	Anugondanahalli	99869 08109
NELAMANGALA TALUK			
1	M.C. Narasihma Murthy Tahsildar	27722085 27722126 (F)	99001 64723
2	Shivaraj Grade-2 Tahsildar		94486 70134
3	Kempegowda RRT Sheristedar, I/C		96866 13720
4	Kempegowda I/C Social Security Sheristedar		96866 13720
5	H.S. Prakash Election Sheristedar		94483 46792
6	Thimmaiah Food Sheristedar		97314 06850
7	Rajendra Deputy Tahsildar	Thyamagondlu	97417 23655
8	Raju, Deputy Tahsildar	Sompur Hobli	80502 36523

SURVEY DEPARTMENT			
1	E. Prakash Deputy Director of Land Records Rangashamaiah, Manager	22861941	94488 32557 97396 76642
2	Asha, ADLR		74113 28578
3	Chandrakala Surveyor		99729 15843
3a	Vani,		87622 27352
4	J. Vijayabhavani, Deputy Director of Land records, Survey Commissioner Office,	22275035 dd-sslr-brd@karnataka.gov.in.	99867 82872
5 **6**	**ಮುನೀಷ್ ಮೌದ್ಗಿಲ್, ಭಾಆಸೇ – (1998 ವರ್ಷ)** **ಆಯುಕ್ತರು, ಭೂಮಾಪನ ಇಲಾಖೆ,** **ನಿರ್ದೇಶಕರು, ಭೂಮಿ,ಯುಪಿಓಆರ್.** **ಹಾಗೂ ಎ.ಜೆ.ಎಸ್.ಕೆ.** **ಕೆ.ಆರ್. ವೃತ್ತ,ಬೆಂಗಳೂರು.1** P.A.Jaishankar Survey Commissioner Office Rudresh, Joint Director, Survey Commissioner Offier Karigowda, SPl. DC Vijaya -8884554706	22212408(O) 22277528(F) commr.sslr@gmail.com. 22113256	94808 66666 94808 85400 98862 31479
7	Arathi, Manger, Atalzi	22109680	99805 34744

REGIONAL COMMISSIONER OFFICE, BMTC BUILDING, 2 ND FLOOR, SHANTHINAGAR, K.H.ROAD, BANGALORE-560027. email ID: rcb27bangalore@gmail, rcb-bangalore-ka@nic.com			
1	M.V.Jayanthi Regional Commissioner & I/C Secretary, Disaster-22251958 Krishna, PA. 9449117374	22109665 22220883 22111163 Fax	98446 37942
2	Sri.D.M. Shivakumar (land) Additional Regional Commissioner	22109670	98867 11481
3	M. Prabhavathi Additional Regional Commissioner (Admn)	22109675 (Section)	96111 01557
4	Shivakumar, Tahsildar		90081 77977
5	Darshan- 97405 15246		

District Administrative Judge, Bangalore Rural District			
1	Sri. Pillappa Justice, High Court of Karnataka Amala, PA & Vanishree	22954416	
Principle District & Sessions Judge			
	S.R.Somashekhar Principle District & Session Judge, Bangalore Rural Abojirao, P.A. Gunman Manju - 9886001659	22214751	72591 39275
	Srikantaiah Chief Administrative Officer Ramesh --- 95386 69945 Shirestedar	22219775	
	Nataraj. G. Kotre, **Dist. Govt. Pleader**	23228288 (R)	98443 09001
Lawyers Association			
1	Huligowda	22217662	99640 79135
High Court Legal Services Committee			
1	Paradeshi, Secretary, High Court Legal Service Committee	22869987(Sir) 22869988(0)	
District Legal Services Authority, Bangalore Rural			
1	Sri. M. Ramesh Member Secretary DLSA, Bangalore Dist, City Civil Court Complex, 2nd Floor, Bangalore-9 Srimanth, PA- 9901113337	22212430 22222919	94484 07901 94817 89303

Karnataka State Legal Services Authority			
1	Justice N.K.Patil Judge, High court of Karnataka Executive Chairman, Karnataka State Legal Services Authority, Bangalore		
2	Deputy Secretary	22111716	
3	Assistant Secretary	22111729	

Advocate General Office- 22868456			
1	Usha	22868456	
Taluk Executive Officers			
1	K. Ashwath reddy Executive Officer Doddaballapura. Nanjundaiah, Manager	27627287	94808 53105 90356 03410
2.	Sri. Umesh, Executive Officer, Devanahalli.	27682227	94808 53100
3	Sri. Arun Kumar, Executive Officer, Hosakote.	27931227 27934044	94808 53110
4	T.K. Ramesh Executive Officer, Nelamangala	27722127 27726145	94808 53115
5	Pushpa, Asst.Audit Officer		94808 53116
6	Thippeswamy, Manager		94808 53117 98445 42523
Chief Officers			
1	K.Narasimha Murty Commissioner City Municiple Council Doddaballapura V. Nataraja, AEE, D.B.Pura Manager	27623031	94499 80465 99643 56537 94810 63100
2	Smt.Ambika Chief Officer Town Munciple Council Devanahalli	27682221	74116 18001
3	P.S. Maruthi Shankar Chief Officer Vijayapura. 3a)Hashmathulla-99018 52400 Manager	27668221 27666100(Fax)	94486 75126
4	Sri. B. Ananth Commissioner, City Municiple Council, Hosakote	27931221	96111 23388
5	Muddurangaiah, AEE		94829 92812
6	B.N.Muniswamy Chief Officer,	27722135	94828 97227

	Town Municipal Council, Nelamangala.		

R.T.O rtobngcka@nic.in			
1	Halaswamy RTO Central, Koramangala Laxshmi narayana- 94486 70837 Kiran, FDA- 98455 93947 Basavaraj Paraddy-9972422763	25633525 25533525	94498 64001
2	Lingaraj R.T.O Nelamangala		94485 27983
3	Thimmarayappa A.R.T.O , Devanahalli & Doddaballapur artodhalli-ka@nic.in	27681999	94498 64043
4	Halaswamy RTO, Hosakote & K.R.Puram Email ID:rtokrpur_ka@nic.in	25617951/59	94498 64053
5	Shobha, D.C.Transport (RTO Jayanagar)		9449864005

TELEPHONE NUMBERS OF POLICE PERSONNEL			
POLICE ELECTION CELL-22352466, Dist. Police Control Room No.22942167, 22942700, 22256767, 22942250 Email: dsbbng@ksp.giv.in			
1	Arun Chakravarthi, IPS., IGP Office, Cunninghyam Road, Bangalore.	22264412 22942298 (fax)	94808 00027
2	Amit Singh, IPS Superintendent of Police Bangalore Rural District Murthi- PA., 9449934500	22264350 22942250 (Fax)	94808 02401
3	Narayan M. Additional Superintendent Police Bangalore Rural District	22260603 22942404	94808 02402
4	T.Konappa Reddy Deputy Superintendent of Police Doddaballapura	7622052	94808 02421
5	Narasimhareddy, CI Devanahalli.	7682581	
6	A.R. Balaramegowda, Deputy Superintendent of Police Bangalore Sub Division, Hosakote	22264170 22942612 Fax	94808 02420

8	A.B. Rajendrakumar D.Y.S.P., Nelamangala	27722688	94808 02422
9	Y. Nagaraj ACP, Devanahalli		94808 01071
10	Harsha DCP North East (International Airport)	22943676 22943704(F)	94808 01064
11	Narayanaswamy, ACP, Yelahanka		94808 01070
12	Y. Nagaraj, Devanahalli Sub Division		94808 01071
1. **ANIMAL HUSBANDARY DEPARTMENT**			
1	Dr.Shivarudrappa Deputy Director	23412189	94492 52147
2	Prasad, Supdt.		95352 85788
2. AMBEDKAR DEVELOPMENT CORPORATION			
1	Arun Kumar Disitrict Manager,	22240436	94480 21510
2	Venilla Manager		70224 13646
2.a.APMC, DODDABALLAPUR			
1	Shivamurthy, Director	22867192	7760955111
2	Basavaraj, Secretaty	27622114	9448970988
3. AGRICULTURE DEPARTMENT & WATER SHED DEVELOPMENT DEPT.			
1	Jayaswamy Joint Director Nagarthna Administrative Officer	26711594(o) 26715718 (F)	72590 04225
2	Geetha Halli, Deputy Director		72590 04335
2	Sri Suryakant Kondi Assistant Director(HQ)	26711594(o)	72590 04227

4. BESCOM DEPARTMENT www.bescom.org			
1	Pankaj Kumar Pande, IAS, Managing Director, BESCOM, K.R. Circle, Bangalore-1.	22354929 22354928(F)	99000 95440
2	Sri. N,.R.M.Gopala Krishnappa. Suptd.Engineer, Bangaore Rural Dist, Cresent Towers, Cresent Road, Near Mallige Nursing Home, Bangalore.	28488723	94482 79007
3	Basavanna C Executive Engineer, Bescom, Hosakote & Devanahalli Sandeep, AEE, Bescom	28565286 (F) 28565822	94482 79024
4	Narayanaswamy A.E.E. Bescom, Devanahalli.	27681080	94482 79082
5	B.T.Gangaraju, AEE, Bescom, Doddaballapura	27623913	94482 79080
6	Channaveeraiah Executive Engineer, KPTCL Major Works		9448365211
7	Muniraju P EE, Bescom, Nelamangala & Doddaballapura	27725585 (O)	94482 79025

5. Bangalore Diary, Bamool, email: bamulkmf@yahoo.co.in			
1	D.C. Nagarajaiah, Managing Director, Bannerughatta.	25536968	99000 43033
2	Dr. Sadashiv, Deputy Manager,	26096314 26096307	77609 65565
3	Dr. K.P. Shivashankar Manager		77609 66801

6. K.M.F ps.mdkmf@gmail.com			
1	Rakesh Singh IAS., (2003 Batch) Managing Director, K.M.F (State) Ayoob, P.A.	**25536539**	99532 11106
2	M.B. Suresh Babu Director, Animal Husbandry	**25536223**	95919 94321
3	Manjunath, Addl. Director, Estate		95919 94339
Kempegowda International Airport			
1	Koushik Mukarjee, Chairman to Bangalore International Airport Limited (KIA)		
2.	Mohan Aradhya MG. Senior Manager- Corporate Affairs	66782016	95388 82016
3.	Satish Domnic, Senior Manager- Corporate Affairs	66782552	95388 82552
4	Chandrashekar Biradar Protocall Officer	66782414	95388 82414

5. BMTC & K.S.R.T.C			
1	Dr. Caur, IAS Managing Director **B.M.T.C.** K.H. Road, Shanthinagar	22952501 22952401	9880798979
2	Mr. Venkatesh CTM B.M.T.C.		77609 91201
3	Rajendra Kumar Kataria, IAS Managing Director **KSRTC,** 1st Floor, Shanthinagar. P.A. Nagaraj	22221125 22221321 22240330(F)	72593 01111
4	Shivakumar, Nelamangala Dipo Manager KSRTC		77609 90262
5	Guruprasad, EE Project	22223027 (0)	7760990203
6	Somashekharaiah, AEE		7760990857

6. BCM DEPARTMENT			
Dr. Ashok District Officer		22861306	91413 23172
R.S.Devaraj Manager			94483 34496
V. Anbukumar, IAS, Commissioner, Backward Class Department, 3rd Floor, Devaraj Uras Bhavan, Millar Tankbed Area, Vasanth Nagar, Bangalore-52.			
Minorities Welfare Department			
1. Najeebulla, District Officer, E-mail Id: dombengalururural@gmail (ಅಲ್ಪಸಂಖ್ಯಾತರ ಕಲ್ಯಾಣ ಇಲಾಖೆ)		22866966	94486 27658 72040 27658
Akram Pasha, KAS, Director, Directorate of Minorities, 20th Floor, V.V.Towers, Dr. B.R.Ambedkar Veedi, Bangalore. Email:directorgokdom@gmail.com email:akram.kas@gmail.com		22864212(O) 22865958(F)	77605 44112
7. B.M.R.D.A			
1	Tushargirinath Commissioner, B.M.R.D.A.	22255493	97412 88825
2	Ganghadhara swamy Deputy		
7.(a) BMRCL			
	Pradeep Singh Karola, IAS, (85 batch) M.D, BMRCL	22969202 22969232	9449030120
8. B.W.S.S.B.			
1.	Shashidhar, AEE	22945187	9845444071
	Kotekar, EE		9845444078
9. CANARA BANK- LEAD BANK MANAGER			
1	G.S.Srinivas Manager	25321406	94835 37125
2	Chinivar Deputy General Manager		96637 70011

10. COMMERCIAL TAX			
1	Siddappa, KAS Joint Commissioer Commercial Tax	22267795	
2	Krishnamurty, Deputy Commissioner, (Vigilance) Commercial Tax Office, No.2, A Block, 3rd Floor, Koramangala, Bangalore-560047. (For quarterly Meeting)	25704960	98441 01246

DISTRICT & SESSIONS COURT			
1	S.R.Somashekar Principle District & Session Judge, Bangalore Rural Prathibha P.A. Gunman Manju - 9886001659 Ramesh - 95386 69945 Court Sheristedar	22214751 2293 9388	
2	Srikantaiah Chief Administrative Officer Ramesh --- 95386 69945 Shirestedar	22219775	
3	**Nataraj. G. Kotre,** **Dist. Govt. Pleader**	23228288 (R)	98443 09001
7. DTI DEPARTMENT			
1	Rukmini Principal, District Training Institute Bangalore.	26712960	97425 29829
2	Dr.N.Shrimadhavi, Vice Principle, DTI		80954 10653
2	Administrative Training Centre Mysore	0821 2443264 0821 2443839	
Drugs Control Board			
1	Arun B.P. Deputy Drugs Controller	22264760	94484 07101
2	Mallikarjuna Nagur Assistant Drugs Controller	22264788 22341805	94492 62039

7A Devaraj Urs Development Corporation			
1	Kempanna District Manager	23156007	94493 81162
2	Sujatha, Development officer Harish, FDA- 99007 07094		9448975761

8. EDUCATION DEPARTMENT egovbrural@gmail.com			
1	Abdul Wazid KHazi DDPI	22210107 22215881 180042511004	94489 99325
2	Sathyanarayana, Gezetted Assistend		94483 92789
3	Govindegowdru Education Officer		99010 61444
4	Mahadev Subject Inspector		94803 34628
3	Negalura (I/C) Deputy Director P.U.Board Narendra, FDA- 9986009153	26672441 23361852(Fax)	94481 03702
4.	Hemalatha N.S. District Adult Education Officer I/C D.D. Tourism Email- nshtourismdd@gmail.com		94482 43421
5	Raju **Akshara Dasoha**	22340548	94808 35532
6	Bylanjinappa BEO, Hosakote		94806 95014
7	Muniraju BEO, Devanahalli		94806 95012
8	Hanumanthappa BEO, Doddaballapura		94806 95013
9	Hanuma Nayak BEO, Nelamangala		94806 95015
10	Kusuma Regional Joint Director, Bangalore, Collegiate Education	22260196 jdofficebangalore09 @gmail.com	94481 74323
11	Umadevi G Superintendent.	22260196	9900502889

12	Chakravarthi Mohan, IAS, 2009 batch Commissioner, Collegiate Education P.A. Rajanikanth Email.ID- dce.commissioner@gmail.com	22263327 22283758(F)	94492 46119
13	Shankarappa, Director, I/C, Collegiate Education	22263327	99006 77799
14	P.C. Jaffer, Commissioner for Public Instructions pstocpi@gmail.com	22214350 22212873	

9.EXCISE DEPARTMENT dcblr-ex-ka@nic.in			
1	L.A.Manjunath Deputy Commissioner Srinivas-94483 04642	22868104 22862229 22861343(F)	94495 97029
2	Virupakshappa H.G. DYSE		94495 97267

10.ELECTION COMMISSION OF INDIA			
1	Anil Kumar Jha Chief Electoral Officer & Ex-Officio Principal Secretary to Government, D.P.A.R (Elections) Nirvachana Nilaya, Sheshadri Road, Bangalore-01.	2224 2042 2223 4039(F)	94482 90830
2	Ramesh K.N. (I/C) Addl.Chief Electoral Officer & Ex-Officio Addl Secretary to Govt. DPAR (Elections)	2224 2072 2223 1041(F)	
3	Ramesh K.N. Joint Chief Electoral Officer & Ex-Officio Joint Secretary to Govt. DPAR (Elections)	2222 4195 2223 4198	
5	Raghavendra V Deputy Chief Electoral Officer & Ex-Officio Joint Secretary to Govt. DPAR (Elections)	2222 4195	
6	General Section	2222 4212	

11. STATE ELECTION OF KARNATAKA				
1	Sri. Srinivasachari P.N Commissioner	22205182 22264014(Fax)	94489 92055	
2	Smt. S. Honnamba, KAS Secretary	22205193 22284428(Fax)	94490 74750	
3	Chandra Shekar, Under Secretary-1 Under Secretary-2	22205189 22284428		
12. FISHERIES DEPARTMENT, Email.ID: sadf-blr-ka@nic.in				
1	Veerappa Gowdru Director, Fisheries Dept.			96866 87881
2	Chikkaveeraiah, Senior Assistant Director of Fisheris.	22201801		99803 23200
3	Nagaraj, Supdt.			99027 88379
13. FOREST DEPARTMENT				
1	Mahesh Kumar Deputy Conserver of Forest Territorial Nousin, Manager-98448 22132	23347069 23344686(Fax)	94821 41287	
2	D.N. Nagarajachar Deputy Conserver of Forest Social Forestry	23343167	94487 93667	
3	Nizamuddin Range Forest officer Doddaballapura Sadashivaiah, RFO/SF		98807 63007 81840 82929	
4	Vanitha RFO, Nelamangala (Social Forestry)		94810 94237	
5	Nagesh ACF, Doddaballapur		97390 94114	
6	Prakash RFP/SF, Devanahalli Manjunath, RFP/SF Hosakote		94481 6075 97400 37333	
Fire Force Dept				
1	Sri Shivakumar Chief Fire Offier Bangalore West (Dev & Nel)	22971523 22971512 (F)	94482 33955	
2	Ravishankar Region Fire Officer		94483 21212	
3	Basavanna, CFO Bangalore East (Hosakote)		9448978640	

4	Vasanth Kumar Dist. Fire Force Offier Nelmangala tq.	22971533	94487 20759
5	Ramesh, Dist. Fire Force Offier Devanahalli tq.	22971583	99008 48602
6	Shashidhar, R.F.O.(West) (Dev)		94804 50668
7	D. Rasheed, Deputy Director,(Admin) Fire Force office		9845155897
8	B.K.Hampagol Deputy Director,(Admin) Fire Force office	22971509	
9	B.N. Manjunath Regional Fire Officer Devanahalli& D.B.Pura North Range.	22971521	94482 19206
10	Vijaykumar , D.F.O., Hoskote	22971541	94486 43863

14. HEALTH DEPARTMENT dhobangalorerural@gmail.com				
1	Dr. Rajesh K.S. District Health Officer	23281422		94498 43038 98457 18368
2	Parvathamma Asst. Administrative Officer			9845037092
3	Syed Sirajuddin Madani, R.C.H. rchobangalorerural@gmail.com	22352746		94498 43183
4.	Dr.Vasanth Nag , DPMO			94498 43069
5	Raveendra Karanth Senior Food Safety Officer			98861 24647
6	Nagaraj Junior Food Safety Officer			97312 11969
7	Dr. Ravi prakash Dist. Family Welfare officer			94491 79343
8	Dr. Ashok Venkobarao Aids Society & T.B. Society	26530633		94498 43215
9	Dr. Rozi Leprosy & DBGS Officer			99456 89617
10	Dr. Dharmendra Dist. Vector Borne Disease Control Officer & Dist Surveillance officer.	22352650		99019 61771
11	Madhusoodhan District Manager, 108 Ambulance GVK Emergency Management			96322 26108

	and Research Institute			
12	Dr. Shylakumar, Dist. Aids Control officer, Dist. Aids Prevention control unit.(Dapcu)	23540996		94486 59492
14.a Handloom & Textilies Dept ddtexblr@yahoo.com				
1	Dinesh K. Hebbar, Deputy Director, VPTC Building, Kasturabha Road, Bangalore-1	22860495 22866444		99020 27536
2	Premakumari Asst. Director			99869 41418
15. HORTICULTURE DEPARTMENT				
1	M. Pavithra Deputy Director District Horticulture Office	22862206 ddhbangalorer @yahoo.com		94489 99214
2	Jayaprakash,			99865 07804
	S.B.Bommanahalli, IAS, Director, Horticulture Department.			94489 99200
16. I.G. REGISTRATION DEPARTMENT				
1	Shankaralingaiah District Registrar	23500230 blr.rural.dro@gmail.com		97319 33067
2	Shankaregowdru, H.Q.A.			97402 53479
3	Raghavendra, Manager, DRO			98803 25010
4	Mahadeva Swamy S.			99800 30183
5	N. Prakash, IAS I.G(R)	22220358/678 /754		
17. INDUSTRIES AND COMMERCE DEPARTMENT jd-bang-r@karnataka.industry.gov.in				
1	Sateesh S.R. Joint Director, DIC Bhagavath- 98451 56081	23142151 23142152 23145216(F)		94487 40101
2	Mahadevaiah Deputy Director, DIC	23142152		74066 96568
3	Narendrababu Deputy Director, Khadhi Village Industries ZP, Rural	22860437 22863742		98452 48733

4	Gowrav Gupta, IAS, Commissioner for Industrial Development & Director of Industries & Commerce. No.49, Khanija Bhavan, Race Course Road, BANGALORE.	2238 6796		
Factories and Boilers				
1	T.G. Manjunath Director	26531200		94481 00590
2	B.V.Ravikumar Deputy Director Industries and Boilers Rajgopal - 9845169492 T.R. Ramesh- 9448354248	26531206 26531203/4 26531206(0)		94480 81682
3	A.R. Vijayendra, Joint Director			98456 66691
18. IRRIGATION DEPARTMENT (MINOR)				
1	D.Dayanand Executive Engineer Minor Irrigation Department	26632884 26532884 (F)		94490 71928
2	Hanumantharayappa, AEE			81050 05285
3	Manjunath, AE, Doddaballapur			90088 93945
4	Vivek, A.E, Doddaballapur			98459 06334
5	Janardhan, AE. Nelamangala			98807 61806
6	Krishnakumar, A.E, Devanahalli			91417 13032
19. INFORMATION DEPARTMENT				
1	Devarajaiah Dist. Information Officer	22028062 22863794(F) 22028064(F)		94808 41249
2	Asst. Director	22028063		
3	Smt. Nagaratnamma			
20. KANNADA AND CULTURE DEPARTMENT				
1	Susheela (Incharge) Asst. Director	22221271 22484516 22221235 22214379(F)		9663844353
2	Baghavan			9916793455
20a. K.H.B.				
1	V. Yeshwath, IAS(2010 Batch) Commissioner,KHB	22213592 22215943 22240796(F)		94806 85314
2	Sri Yogesh, IAS Secretary, Housing Dept	22216841		94496 79294

3	M.Ganesh. Chief Engineer, KHB	22100077 22215125(F)		94824 67561
4	Ranganath A.E.E.			94490 38966
5	Bhat, Manager, Land Acquisition			98443 43450
6	Bhaya, AE			99869 13094
7	Durgappa, EE			94494 07909
8	**Irfan, AE**			**9740512824**
20b. K.I.A.D.B.				
	Shekharappa, C.E.O Anil P.A- 90606 39363	22267900		
1	Shivegowda SLAO			94494 28066
2	Narayanaswamy, Manager, SLAO office			99022 55453
3	Ramu Development Officer-3 Devanahalli & D.B.Pura			98450 29319
4	Jagannath, Development Officer -2 Hoskote			94481 16940
5	Swamy Chief Development Officer (State)	22242005 22215383		94481 18577
5	Iftikar Ahmed Development Officer-1 Nelamangala			99016 04074
6	Nagarathan Manager, Spl.DC office			99165 05331
7	Suma, Joint Director Town Planning			94800 10577
8	Rangappa, Special Deputy Commissioner for land acquisition			94484 94426
8	Govindaraju Manager			98459 09114
20c K.P.L.C				
1	Subhod Yadav, IAS, (99 Batch) Managing Director, Karnataka Public land Commission, 2nd Floor, D.C. Office Building, Near City Civil Court, Bangalore Varalakshmi- PA	22114233 22133558		94496 50000

K.S.S.I.D.C.				
	Dr. B.Gurappa Chairman	23151559		8884415741

	K.P.T.C.L.			
1	Pankaj Kumar Pande, IAS, I/C Managing Director, KPTCL	22214342 22244556		
21. LIBRARIAN DEPARTMENT rdcl.brangalore@gmail.com.,				
1	Anitha Deputy Director (I/c)	23352460 (F)(o)		96638 78285
2	Anitha Dist. Librarian			96638 78285
3	Veeranna, Asst. Librarian			77600 69927
LEAD BANK				
1	G.S.Srinivas Lead Bank Manager	25321406 25320390(F)		94835 37125
2	Lakshman Kulkarni, Clerk			87920 67694
Labour Department				
1	Srinivas Additional Labour Commissioner	26531253		94498 32845
2	Sripad Deputy Labour Commissioner (for Hosakote & Devanahalli) Region-2	26086253 26531254		99012 38300
3	S.B. Ravikumar Deputy Labour Commissioner (for Nelmangala & Doddaballapur) Region-1			94485 62565
4	K.L.Ravikumar Assistant Labour Commissioner RSBY & Nelamangala	26531258/68 Extention-254		94490 06421
5	K.B.Nagaraj, Asst. Labour Commissioner Division-2, Doddaballapur			98459 85504
6	Somanna Asst. Labour Commissioner Division-3 Devanahalli			94480 50726

7	Mohamed Zaheer Bhasha Asst. Labour Commissioner Division-4, Hosakote			98803 31666
8	Ravikumar Labor Inspector, Nelamangala			94818 00739
9	Ramaiah Labor Officer-1 Nelamangala			94487 40084
10	Rajashekhar Reddy Labour Inspector Devanahalli			94480 38609 90604 16369
11	Kiran Labour Officer Devanahalli			99869 34511
12	Manjunath, Labour Inspector, Hosakote Taluk			94492 49535
13	Mukunda Labour Offier Hosakote Taluk			96865 72730
14	---------- Labour Inspector, Doddaballapur			
15	Krishanamurthy Labour officer, Doddaballpur			97415 40983
Legal Metrology Department				
1	Assistant Controller			22253500 22370318
22. MINES AND GEOLOGY DEPARTMENT ddbangalorerural@gmail.com				
1	Sampath Krishna Deputy Director (I/C)	22866620		82772 18495 94481 32041
2	Smt. Sannaboramma Joint Director	22269634		99640 10538
3	Jagadeesh, Geologist Doddaballapur & Nelamangala			94802 47475
4	Shobha, Geologist Check post			97319 27333
5	Chandrashekhar, Geologist Devanahalli & Hosakote			99450 19073
6	Chandrashekhar, A.E.			94490 47535

Department of Ground Water				
1	Dr.Prasanna Kumar (I/C) Senior Geologist Ground Water1	22862108		99642 61277
2	Nagaveni K.S. Geologist	22862108		89518 90852
23. NEHRU YUVA KENDRA				
1	G.E. Narayana Gowda Dist. Youth Co-ordinator	23209157		94480 68641
2	Sundaramma, Asst. Programme Officer			77605 81988

23(a) Nirmithi Kendra				
1	Vasudev Project Manager	40921796		94482 87519
2	Munegowda Project Officer			
23(b) N.H.A.I				
1	Surendra kumar Project Director, NHAI Manjula. -P.A	28394383 28394403		99019 76111
2	Srishah Gangadhar, Technical Manager, (NH-48)			94498 44456
3	Prashanth Technical Manager (NH-4)			81051 22111
4	Smt.Shobha, SLAO, Hebbal & Kolar, N.H.4 & 7			
5	Malleshaiah, SLAO, NH-48 & 207 Site Office at Nelamangala Sriganda Petrol Bunk Hanumantharayappa Manager- 8904387172 Lingegowda - 9844014699 Manager, Technical Venkataswamy -9448713751 Choodappa -9591967761 -9449844456	27700330		82772 02381

N.I.C				
1	Veena District Information Officer National Informatics Centre, Bangalore Rural District, Zillapanchayath Building, Ground Floor, K.G.Road, Bangalore.9 Ranjana- 7411394489 DIA Lakshmisha, Director, NIC, V.V.Tower	22353618 22371368 22863218 22863790 22865882 22863819		99005 16265 9449803802
2	Rajendrakumar			94835 09776
3	P.V.Bhatt			94498 14158
Navodaya				
1	R. Chakravarthi Principal Jawahar Novodaya School, Doddaballapur	27626781		0811 6438494
2	D. Giri, Vice Principal & I/C Principal			9480745940
2	Basavaraj Sports Teacher			9449507143
PWD DEPARTMENT eepwdbngdn@yahoo.com				
1	M.N. Raju Executive Engineer	22133370 22133365(Fax)		96864 66299
2	K.Ship	22126759		
3	Padmanabha AEE, Hosakote,			99454 06572
4	Vishwanath AEE, Devanahalli			98459 61488
5	Manjunath AEE, Doddaballapura			94488 82192
6	D. Ranganath AEE, Nelamangala			90357 44013

	V.V.Tower PWD Office Rajanna, Electrician - 9964615213 Rajendra, JE (Electrical) - 9972999916 Ziyauddin - 9916025793 Krishna 9448507475 A.E Building Maintenance. Sateesh- 90084 21725 AEE Nagaraj -- 94810 37449 work inspector,	22863305		
Protocol				
1	Jayavibhava Swamy, Deputy Secretary to Govt. DPAR(State Protocall) Ex-Officio Director,State Haspitality, Organisation & State Protocol Officer, Room No.318A,3rd Floor, Vidhana Soudha, Bangalore E-mail: asprotocol_dpar@karnataka.gov.in state protocall officer @gmail.com	22252849(o) 22254231(F)		
KARNATAKA STATE POLLUTION CONTROL BOARD				
1	Sathish Senior Environmental Officer Divisional Office, Bangalore North seon@kspcb.gov.in 1st Floor, Urban Eco Park, 100 Feet Road, 3rd Phase, Peenya Industrial Area, Bangalore-58.	28378716		98453 10957
2	Asif Khan Regional Officer, Doddaballapur	28396000		9902801125
3	Vasudev Regional Officer, Hoskote/Devanahalli			99452 76544
4	Dr.Lakshminarayana Regional Officer,Nelamangala	28390499		97316 20801

	Lidkar			
1	Muniraju, District Co-ordinator,	22238893 (O&F)		91640 59053
2	Bangera, Nodal Officer			94808 86252
3	**Nandish, B.T.** **M.D, lidkar**	**22238898**		**94808 86251**
24. RAJIV GHANDI RURAL HOUSING CORPORATION				
Jagadeesh (2005 batch) MD Rajev Ghandhi Rural Housing Corp. No.1,2,3,4, I.T. Part, 1st Floor, 4th Main Road, Rajajinagar		23113606(PA) 23118888 23145085		96862 66226
24. REGISTRAR OF CO-OPERATIVE SOCIETY **drcs_brur_ka@nic.in**				
1	Nanjundegowda Deputy Registrar of Co.op.society	23446272		99640 59257
2	Shivashankar Superintendent			81050 99931
3	Pramodkumar Co-operative Development Officer			98447 59575
25. SOCIAL WELFARE DEPARTMENT				
1	Srinivas District Social Welfare Officer	22240483 22113425(F)		94808 43020 96206 78031
2	Rajalakshmi M. Bhatt, (SCP) Manager	22240483		93423 63869 81974 63908
3	Nagamani, Gazetted Manager			98452 83474
	M.V.Savithri, IAS Commissioner, Socidal welfare department 5th Floor, M.S;Bldg, Bangalore	22253783 22353735		
26. SERICULTURE DEPARTMENT				
1	Prabhakar Joint Director	23133400		94490 38188
2	Vijayakumar Deputy Director Sericulture Department Bangalore Rural District.	23524140 23133400		94495 26081 98450 55050
3	Anjaneya Gowda Asst. Director			94481 06715

27. STATASTICAL DEPARTMENT				
1	Venkatesh Dist. Statastical Officer	94835 70537		98455 36279 8762302945
2	Chandrakala Assistant statastical Officer			81053 75732
27a. SMALL SAVINGS DEPARTMENT				
1	K. Jyothi (I/C) Director	22862785 22867700		99001 18421
2	K.R. Nagendra Rao, Asst. Director	22862287		98457 38274
Treasury Department **ddtry.rdt-kar@gov.in**				
1	Rukminidevi Dist. Treasury Officer	22129431 22863873		97430 55566
2.	Srinivasalu, Assistant Treasury Officer	22129431		77957 58449
3.	Suma, Deputy Director, State Huzur Treasury	22212757		99805 19873
28(a) TOURISM DEPARTMENT				
1	Ravindra Deputy Director Tourism Department. Vijayalakshmi, Manager -	43344353 22224415 (F)		98804 94300
2	Ratan, District Co-ordinator			95917 78824
3	Sathyavathi, IAS Director Tourism Dept. (PA-- Maya)	22352727 22352525		89706 50200
Textiles Dept				
1	Sri. Prakash. S. Joint Director	22860495		94486 44074

29. WOMEN AND CHILD WELFARE DEPARTMENT			
1	Maheswarappa Deputy Director	23522176 23522175(F)	94481 02017
2.	Pushpa Rayar Asst. Director, Women welfare	23522175	94490 31219
3	Subramanya Raje Uras District Disabled officer Director	23423181	88618 53917

4	Govindaraju Director, Disable Welfare Dept, V.V. Tower, Bangalore. Poornima, PA	2286 6066/0907 2286 6046 2286 8347(F) Email:dir-dwdsc-ka@nic.in	72592 65099
5	K.S. R ajanna, State Commissioner, Disable	23462625/59	99860 35981
4	Aswathamma, I/C Dist. Child Protection Officer, dcpobrural2012@gmail.com		99865 65222
5	Aswathamma, CDPO, Devanahalli		99865 65222
6	Venkatesh Reddy CDPO, Nelamangala		94480 49495
8	Jayalakshmi CDPO, Doddaballapura		96204 73814
9	Eraswamy CDPO, Hosakote		94485 12299
Wakf Board			
1	Zulfiqurulla, CEO, Karnataka State Board of Wakf, Kanningham Road,Bangalore-560052.	22264594/95	94808 25476
1	Tazyeen Tahera Wakf Officer, District Advisory Committee, No.4C, 2nd Floor, Hameed Shahh Complex, Cubbon Pet, Bangalore-560002. bnrdwac@gmail.com.	22278470	94498 48570
2	M.D.Gafar, SDA Data Entry Operator		8088261245
30.YOUTHS DEPARTMENT bangaloreruralyouthservices@gmail.com			
1	T.K.Gowda Youths Officer	22113603	94494 78084
2	Meenakshi- 72591 83376 SDA., Balakshishna Attender- 9986377319		
3	Anand Attender- 9945125738		
4	H.S.Venkatesh, Commissioner,	22215601	

31. ZILLA PANCHAYATH email:ceo_zp_brur.@nic.in			
1	C.P.Shylaja Chief Executive Officer., Zillapanchayath (Bangalore Rural) Nanjundaswamy, PA- 94808 53107	22260796 22261079(F)	94808 53000 94496 26001
2	V. Prasad, President, Zillapanchayath, Bangalore Rural District. Gurunath, PA.-94495 20510	22257001 22267068(F)	94485 50650
2 (a)	Anathakumari P.N. Vice President, Zillapanchayath, Bangalore Rural District.	22252390 22261079(f)	96323 60919
3	K.C,.Manjunath, Member, Kundana, Devanahalli Taluk		98451 53243
4	Smt. Rekha Rajanna President, Aloor Duddanahalli grama Panchayath, Devanahalli,		99722 59090

3	M.Chandrahasa Executive Engineer(PRED) (Bangalore)	22371823	94480 53012 94494 05995
4	Sri. Madhuram N. Chief Planning Officer Zillapanchayath, Bangalore Rural Dist.	22260328	94808 53004
5	K.R.Rudrappa D.R.D.A & SAGY	22206424	94808 53002
6	Shivanna, District Co-originator for Census Zilla Panchayath		98452 63179
7	Kamalapur Ravi C.A.O Zillapanchayath		94808 53003
8	Shivalingaiah Deputy Secretary- Zilla Panchayath	22267068	94808 52001 96327 34778
9	EE, Rural Water Supply Suresh Kumar, PA-94483 92501	23561036	

LIST OF ABBREVIATIONS

AAI	Airport Authority of India
AC	Assistant Commissioner
ADM	Additional District Magistrate
ASP	Additional Superintendent of Police
ATC	Air Traffic Controller
BPCL	Bharat Petroleum Corporation Limited
CP	Cathodic Protection
CPI	Circle Police Inspector
DC	Deputy Commissioner
DMP	Disaster Management Plan
ECC	Emergency Control Centre
ECR	Emergency Control Room
HPCL	Hindustan Petroleum Corporation Limited
HQA	Head Quarter Assistant
HSD	High Speed Diesel
IDLH	Immediate Danger to Life and Health
IGP	Inspector General of Police
IMC	Indian Molasses Company
IMD	Indian meteorological Department
IOCL	Indian Oil Corporation Limited
KEB	Karnataka Electricity Board (MESCOM)
KISCO	Kudremukh Iron and Steel Company
KMC	Kasturba Medical College
KREC	Karnataka Regional Engineering College
KSRTC	Karnataka State Road Transport Corporation
LPG	Liquefied Petroleum Gas
MAH	Major Accident Hazard (industries)
MS	Motor Spirit (Petrol)
MSDS	Material Safety Data Sheet

POL	Petroleum Oil Lube
PPE	Personal Protective Equipment
PS	Police Station
PSV	Pressure Safety Valve
RTO	Regional Transport Officer
SCADA	Supervisory Control And Data Acquisition
SCBA	Self Contained Breathing Apparatus
SDPO	Sub Divisional Police Officer
SKO	Superior Kerosene Oil
SP	Superintendent of Police
TLV	Threshold Limit Value
TSV	Temperature Safety Valve