

## FLOOD CONTROL

The National Capital Territory of Delhi has been experience floods, mainly from Sahibi River in the past (Passing through Najafgarh Drain in Delhi and Yamuna River). Local drainage system has also been found to be inadequate to meet the requirement when there is heavy rain fall in the catchments of these drains or during inflow of flood water from adjoining states in Yamuna River. Several flood mitigating measures like raising and strengthening of Yamuna marginal embankments, remodeling and lining of various drains have been taken up over the years to avoid repetition of flood.

Approved outlay for 11<sup>th</sup> Five Year Plan 2007-12, approved outlay, expenditure for 2007-08 and approved outlay for 2008-09 are given below.

[Rs.in lakh]

S. No.	Items /Major Activities	Approved outlay for 11 <sup>th</sup> Five Year Plan 2007-12	Approved Outlay for Annual Plan 2007-08	Expenditure during 2007-08	Approved outlay for 2008-09
1.	Embankment Schemes including Access Roads & Bridges, Anti-Erosion Works & Beautification Works	2355.00	372.00	616.61	913.00
2.	Major/Small Drainage Schemes				
a	Construction works	17967.00	2739.00	1309.17	1787.00
b	Procurement of Heavy Machinery such as Bulldozers, Hydraulic excavators, Dredger, etc.	3500.00	1000.00		200.00
3.	Liability on completed schemes/works	773.00	300.00	197.74	90.00
4.	Charged Expenditure	210.00	50.00		10.00
5.	Survey/Model Studies (Water Development / Drainage)	195.00	39.00	20.07	60.00

<b>S. No.</b>	<b>Items /Major Activities</b>	<b>Approved outlay for 11<sup>th</sup> Five Year Plan 2007-12</b>	<b>Approved Outlay for Annual Plan 2007-08</b>	<b>Expenditure during 2007-08</b>	<b>Approved outlay for 2008-09</b>
6.	Trans Yamuna Area Development Board Drainage Schemes	2000.00	400.00	649.95	300.00
	<b>Total</b>	<b>27000.00</b>	<b>4900.00</b>	<b>2793.54</b>	<b>3360.00</b>

**A. EMBANKMENT SCHEMES INCLUDING ACCESS ROADS & BRIDGES, ANTI EROSION WORKS AND BEAUTIFICATION WORKS (Rs.913.00 lakh)**

The marginal embankments along Yamuna River in Delhi can withstand discharge upto 2.5 lakh cusecs in the river against the requirement of 3.5 lakh cusecs for a flood frequency of one in hundred years as suggested by Central Water Commission, Govt. of India.

**1. Construction of Embankment on Right Bank of River Yamuna in between Nizamuddin Railway Bridge and Nizamuddin Road Bridge (Rs. 50.00 lakh)**

In the wake of ensuing Commonwealth games to be held in the year 2010, DDA requested CWPRS, Pune to conduct model studies for different discharges in river Yamuna with and without Akshardham Bund in position. CWPRS in their report suggested for strengthening of right bank of river Yamuna between Nizamuddin Railway Bridge and Road Bridge.

Accordingly, a scheme amounting to Rs.9.25 Crore has been framed and the scheme has been cleared by TAC, FCB and EFC. However, clearance from CWC is awaited.

**2. Strengthening of Yamuna Bazaar Wall (1100m) Corresponding to 3.5 lacs Cusecs Discharge**

It has been observed during flood of 1995 that the existing brick masonry wall is not sufficient to with stand the flood intensity of 3.50 lakh cusecs in river Yamuna. At a number of places the wall had to be strengthened by placing earth filled empty cement bags. Further flooding action was seen on the other side of the wall. In view of the aforesaid condition, it has been considered necessary to strengthen the existing wall. No provision has been made in Annual Plan 2008-09.

**3. Raising and Strengthening of LF Bund Corresponding to 1 in 100 Years Frequency**

L F Bund constructed corresponding to one-in-twenty five year frequency because it was a rural embankment. The area on the city side of this embankment has been completely urbanized by coming up of new colonies, CRPF Camps, Sonia Vihar, Rajiv Vihar,

etc. It is, therefore, proposed to strengthen this embankment considering it as an urbanized embankment corresponding to one in hundred year flood frequency. The project has an interstate ramification and requires clearance from Yamuna Committee before its execution. No provision has been made in Annual Plan 2008-09.

#### **4. Construction of Bridge on Mungeshpur Drain at RD 4610 M (Rs. 50.00 lakh)**

It is an ongoing scheme amounting to Rs. 111.67 Lakh for demolishing of existing bridge and construction of double lane bridge. An expenditure of Rs.25.73 lakh has been incurred so far and work is in progress.

#### **5. Const. of Additional Double Lane RCC Bridge at RD 24309 M across Supplementary Drain U/S of Nihal Vihar Bridge (Rs.30.00 lakh)**

The Proposed additional RCC single lane bridge is to be constructed just adjacent (on u/s side) to the existing bridge at RD 24309 m of Supplementary Drain. Due to fast urbanization of the area adjoining the Supplementary Drain on both sides particularly on the left side of Supplementary Drain, there has been traffic congestion on the existing bridge. To reduce the congestion of traffic on the existing bridge, the scheme for the construction of double lane RCC bridge amounting to Rs.164.30 lakh has been cleared by TAC and Flood Control Board. However, A/A & E/S is yet to be issued.

#### **6. Construction of Additional Bridges and Widening of Existing Bridges over Various Drains (Rs.5.00lakh)**

The drains of Flood Control Department are passes through very thickly populated areas and unauthorized colonies developed due to migration of the peoples from other states has put up a tremendous pressure over the existing bridges resulted in renovation/construction of new bridges over the drains.To meet out the demands of the people and simultaneously considering the increasing intensity of the traffic and reduction in water ways compelled the department to plan the strategy to renovate/construct the structures like Foot Bridge and other type of bridges.

#### **7. Const. of two Lane Bridge across Supplementary Drain at RD 21350 M near village Sultanpur Majara (Rs. 30.00 lakh)**

Number of bridges has also been constructed on Supplementary Drain. However, at RD 21350m i.e. on Sultanpur Majra - Sultanpuri resettlement colony road, there was no provision for widening of existing bridge in the scheme and it was proposed to be dismantled. With the passage of time, abadi on the either side of proposed bridge i.e. towards Sultanpur Majra and Sultanpuri has increased many folds and hence there is a requirement for construction of two Lane Bridge at this location also.

**8. Construction of Two Lane RCC Bridge connecting Budh Vihar and Vijay Vihar at RD 18750 M of Supplementary Drain (Rs. 30.00 lakh)**

Numbers of bridges have been constructed on this drain, however, at RD 18750 m i.e. on Budh Vihar to Vijay Vihar road only one foot bridge has been constructed as per provisions in the scheme. But with the passage of time, abadi on the either side of proposed bridge i.e. towards Budh Vihar and Vijay Vihar has increased many folds and the vehicles have to go either to Rithala Bridge at RD 17700m or to Budh Vihar Bridge at RD 19362 m to cross the Supplementary Drain incurring huge extra expenditure on fuel etc.

**9. Construction of RCC foot bridge near RD 5300 m across Gazipur Drain in front of Kala - Niketan Public School, Gazipur (Rs.30.00 lakh)**

The area MLA demanded for the construction of a foot bridge across Ghazipur Drain in front of Kala Niketan Public School, Taj Apartment as per the demand of local residents of the area to provide a direct link of the I.P. Extn. Patpar Ganj area with the other side of Ghazipur drain.

**10. Construction of Road on left bank of Supplementary Drain from RD 16436 m to RD 14100 m. (Rs. 30.00 lakh)**

Inspection road in almost whole of the reach of Supplementary Drain exist except in the above portion and few other locations. For proper maintenance of drain throughout the year it is proposed to construct inspection road on left side embankment of the drain. This will facilitate proper inspection and maintenance of drain, inlets and bridges in this reach. It will also help the people of vicinity in reaching their destination.

**11. Construction of parapet wall along the road on right bank of B.C. Drain from RD 400m to 8500 m. (Rs.40.00 lakh)**

The road on Right Bank of B.C. Drain from RD 400m to 8550m is a busy road due to heavy traffic of Delhi Territory and Haryana Territory and several accidents occur during night hours. The level difference between bed level of B.C. Drain and top of road is about 4.00 meter average. It is, therefore, essential to provide a parapet wall along the road (drain side) to check the accidents. Whereas from RD 400m to RD 2780 and RD 6280m to RD 8550m falls in Delhi.

**12. Construction of CC pavement including construction of parapet wall on right bank of Palam drain from RD 6100m to RD 8500m (Rs.25.00 lakh)**

The condition of the existing inspection road of Palam drain from RD 6100m to RD 8500m is dilapidated to great extent and a lot of pot holes have been developed on its surface causing inconvenience to the people of the area and the vehicular traffic plying on this road. To overcome the above stated problem, it has become necessary to construct

the CC pavement from RD 6100m to RD 8700m on right bank of Palam drain along with a provision for construction of 1.15m high parapet wall wherever missing to provide safety to vehicular traffic moving on this road.

**13. Construction of 3.6m wide bituminous road from RD 2740 m (Najafgarh-Nangloi Bridge) to RD 9024m (Jharoda Bridge) on left bank of Mungesh Pur Drain in N.G. Block (Rs.60.00 lakh)**

Mungeshpur drain traverses through various villages such as Nangli Sakrawati, Baprola, Dichaon, Kalan, Jharoda Kalan & then out fall into Najafgarh drain near Kakraula Ragulator. A 3.6m wide bituminous road exists on both the banks of Mungeshpur drain between RD 0m to RD 2740m. Beyond RD 2740m, the berms of the kachcha left bank is not jeepable, are badly deteriorated and are uneven at many places and the maintenance of drain become very difficult during monsoon season, as such need for construction of pucca road has arisen. .

**14. Construction of CC pavement on left bank of Palam drain from RD 6100m to RD 8500m (Rs.20.00 lakh)**

The condition of inspection road on left bank of Palam drain from RD 6100m to RD 8500m is dilapidated to great extent and a lot of pot holes have also been developed on its surface and are causing inconvenience to the people of the area and the vehicular traffic plying on this road. To over come the above stated problem, it has become necessary to construct the CC pavement from RD 6100m to RD 8500m on left bank of Palam drain.

**15. Construction of single lane RCC Box culvert at RD 135m and RD 55m of Palam link drain (Rs. 4.00 lakh)**

Palam Link drain presently takes off from Palam-Dwarka Road near Palam Veterinary Polyclinic and outfalls into Palam drain on its left bank at RD. 4663m. With the passage of time, a number of unauthorized colonies have come up along both banks of Palam Link drain and population around this drain has increased many-fold. At the above site at RD 135m and 55m, people are crossing the drain on a ramp made of two numbers of 1200mm dia RCC pipes. The existing RCC pipes at RD. 135m and 55m create hindrance to free flow of water in the drain due to inadequate water way.

**16. Construction of single lane RCC Box Bridge at RD 3050M and 3333M of Pankha Road drain (Rs. 30.00 lakh)**

Over and across this drain number of temporary culverts were existing having inadequate water way and were constructed by the locals without following any technical parameter, to have access across the drain. With the passage of time the population around this drain has increased manifold as number of authorized and unauthorized colonies have come up along both banks of Pankha road drain. Therefore, the existing culvert at RD. 3050 M and 3330 M have become inadequate to take load of increased vehicular as well as pedestrian movement. Further the exiting culvert having inadequate

water way are causing obstruction in free flow of water in drain and thus to keep the drain clear it is necessary to remove this culvert.

**17. Construction of single lane RCC Box Bridge at RD 2900m of Nasirpur drain. (Rs.20.00 lakh)**

Over and across this drain number of temporary culverts were existing having inadequate water way and were constructed by the locals without following any technical parameter, to have access across the drain. With the passage of time the population around this drain has increased manifold as number of authorized and unauthorized colonies have come up along both banks of Nasirpur drain.

**18. Construction of inspection road/approach on left bank of Mungeshpur drain from RD 34849m to RD 31204m (from Qutabgarh- Garhi Bridge to Punjab Khore- Ladrawan Bridge (Rs.40.00 lakh)**

The Mungeshpur drain starts from Delhi Haryana Boarder passing through the villages Mungeshpur Qutabgarh, Punjab Khore, Jaunti, Ladpur, Kanjhawala, Sawada, Tikri Kalan, Jharoda Kalan and Dichaun Kalan etc. and falls into Najafgarh Drain at RD 67000 feet. During monsoon, it is very difficult to inspect this drain, as the banks are kuchcha. As such it is necessary to construct an inspection road on the left bank of this drain so that during monsoon the proper watch and ward can be done. It is proposed to lay two layers of WBM with Red Bajri at top in this scheme.

**19. Demolishing and reconstruction of existing single lane road bridge on Jharoda-Tikri kalan road across Mungeshpur drain at RD 9024m (Rs.20.00 lakh)**

It is an old bridge constructed three decade back, as a village road bridge for linking Jharoda Kalan and Tikri kalan village. The bridge was meant for catering to light traffic but due to shifting of PVC market at Tikri Kalan, medium to heavy traffic is also passing over this bridge. Since, the condition of the existing bridge, CRRRI has been consulted and was got inspected by them. As per their report, it was decided to demolish and reconstruct the same.

**20. Construction of 2.5m wide RCC foot bridge across T.D. No. I at RD 2870m (Near DIET Institute) (Rs.20.00 lakh)**

The area MLA & Parliamentary Secretary to Chief Minister, Delhi made a demand for the construction of a foot bridge across T.D. No. I at RD 2870m near DIET Institute in Karkardooma Institutional area so as to provide facility for crossing the drain from road No. 57.

**21. Construction of inspection road including covering of catch water drain along left bank of Supplementary Drain from Mangolpuri 'Y' Block bridge at RD 19804m to Rithala village Bridge at RD 17700m (Rs.50.00 lakh)**

The exiting catch water drain running parallel to Supplementary Drain between RD 19804m to RD17700m passes through thickly populated area of Mangolpuri, Budh Vihar, Vijay Vihar and Rithala etc. and presently is being used by the villagers to drain out their water. To avoid any accident, it has been decided to cover this drain and covered portion shall be used as a foot path along the proposed inspection CC road.

**22. Demolishing and reconstruction of old culvert adjacent to New RCC culvert at RD 6495m of Burari Creek (Rs.5.00 lakh)**

The necessity of reconstruction of existing culvert arose to accommodate additional traffic and for matching the width of widened Bakhtawarpur-Burari road by Municipal Corporation of Delhi which crosses Burari Creek drain. Since the existing culvert across this drain is very narrow due to which there is difficulty in traffic movement and also there is possibility of accidents during peak hours. So it has been decided to reconstruct the existing culvert.

**23. Repair of damaged road and laying 4 cm thick bitumastic sheet on right bank of Supplementary Drain from RD 31300m to RD 32800m and RD 34200m to RD 34500m (Common Bank of Supplementary Drain and NG Drain) (Rs.20.00 lakh)**

The present inspection roads were earlier constructed/ repaired in year 2000 but with the passage of time, the roads have been damaged at many places and are in deteriorated condition and requires repair.

**24. Repair of damaged road on common bank of Supplementary Drain and NG Drain from RD 25270m to RD 26060m and brick edging from RD 26060m to RD 28080m and providing and laying 25mm thick bitumen mastic wearing course on bridge at RD 25075m, RD 26060m and RD 28080m of Supplementary Drain (Rs.19.00 lakh)**

The present inspection roads were earlier constructed/ repaired in year 2000 but with the passage of time, the roads have been damaged at many places and are in deteriorated condition and requires repair.

- 25. Construction of inspection path on right bank of Mungeshpur Drain from RD 18920M to RD 23074M (from Ghewra-Savda Bridge to Kanjhawla V.R. Bridge) (Rs.40.00 lakh)**

The inspection road from RD 18920m to RD 23074m on right bank of Mungeshpur drain has been damaged at many places and in deteriorated condition needs restoration/repair. The inspection road is being used by the villagers of adjacent villages.

- 26. Improvement of existing road on the left Bank of Supplementary drain from RD 23218m to RD 24300m (Rs.25.00 lakh)**

The existing road on left bank of Supplementary drain from RD23218m to RD 24300m has been damaged due to plying of high intensity of traffic and restoration/improvement of inspection road is essentially required.

- 27. Restoration of existing road on right bank of Supplementary drain from RD 28085m to RD 30085m (Common bank of Supplementary Drain and NG Drain). (Rs.25.00 lakh)**

The existing road on right bank of Supplementary Drain from RD 28085m to RD 30085m, which was constructed during the year 2000, has been damaged due to plying of high intensity of traffic, which is increasing day by day due to coming up of various colonies in nearby areas and restoration of inspection road is essentially required.

- 28. Demolishing of single lane bridge and reconstruction of double lane bridge at RD 29900m of Mungeshpur Drain in village Punjab Khore (Rs.30.00 lakh)**

The bridge at RD 29900m of Mungeshpur Drain is a single lane bridge which was constructed some 50 years back and acting as a main link between Haryana and Delhi for nearby areas. Due to depilated condition of bridge, which causes traffic congestion, the reconstruction of bridge is essentially required.

- 29. Restoration of inspection road on Right bank of Mungeshpur Drain from RD 0m to RD 2740m in NG Block (Rs.5.00 lakh)**

The existing road on Right bank of Mungeshpur Drain and its berms have been deteriorated. Big pot holes have been developed on the road surface, thus causing lot of inconvenience in smooth flow of traffic. Therefore, restoration of inspection road is essentially required.

**30. Restoration of road on Right Bank of B.C. Drain from RD 400m to RD 8550m (Rs.40.00 lakh)**

B.C. Drain was constructed in 1987, big pot holes have developed on the inspection road on Right bank of B.C. Drain from RD 400m to RD 8550m and even at some places the banks has been completely washed out, causing lot of inconvenience in smooth flow of traffic of Delhi and Haryana and requires restoration.

**31. Restoration of road on Mundella Bund from RD 0m to RD 6320m. (Rs.40.00 lakh)**

The bituminous inspection road on Mundella Bund was constructed in the year 1995-96. Due to manifold increase in heavy vehicular traffic on the road and with the passage of time; the condition of the road has deteriorated. Pot holes have been developed and road berms extensively damaged and thus require restoration//repair.

**32. Widening of road between Mukandpur Bridge (RD-5700m) to road approaching Bhalswa Lake at RD 7190m on left bank of Supplementary Drain (Rs.40.00 lakh)**

There exists an inspection road from Wazirabad to Bhalswa, which is being used for carrying out the regular maintenance of drain. Being at the strategically important location, running through the Delhi-Ambala High Way (Road No.50), its importance has increased. It is proposed to give the area as a face lift, keeping in view the huge influx of the traffic which is likely to ply over the National High Way during the ensuing Common Wealth Games. A beautiful tourist spot called the Bhalswa Lake Tourist Complex exists just adjacent to the existing inspection road of the Supplementary Drain.

## **ANTI EROSION**

**1 Strengthening of Ramp No. III at RD 1750 m of Jagat Pur Bund (Rs. 40.00 lakh)**

The present proposal envisages protection of Nose of Ramp No. III at RD 1750m at Jagatpur Bund under Anti-Erosion works on River Yamuna. The ramp No.III at RD 1750 metre of Jagatpur plays vital role in diverting the thrust of water during high floods in river Yamuna and in turn provide safety to main embankment of river. This ramp provides safety to Jagatpur Bund as well as protection to water works of Delhi Jal Board and other bathing ghats in the vicinity. It has been proposed to protect and restore the ramp No.III by way of dumping of requisite stones, laying of stone apron and placing stone filled wire crates. A provision of Rs. 300.00 lakh has been made for Annual Plan 2008-09.

## **B. MAJOR DRAINAGE SCHEMES(Rs.1987.00lakh)**

### **1. Construction of Supplementary Drain to N.G Drain (Phase-I) (Rs.150.00 lakh)**

The aim of the scheme is to improve the flow of drainage in the existing drains/ outlet so that accumulation of water is avoided along with flooding of areas around the drain. The scheme envisages the construction of drain down stream of Kakraula Regulator along the left side of existing N.G. Drain upto its out-fall. Alignment of drain approved by CWC in March 1988 & scheme submitted in August 1988. The scheme revised for Rs.122.87 crore and was submitted in March 1995. The physical progress of 89.82% has been achieved comprising excavation of the drains upto SSWL in a length of 34 Km, excavation of drain upto DBL in a length of 29.37 Km, 18 road bridge, two railway bridge, three foot bridges, two aqueducts, one siphon, 5 pipe bridges, excavation work including construction lined/ retaining wall section in about 4.50 Km length is in progress. An expenditure of Rs.11156.86 lakh has already been incurred.

### **2. Remodeling of Jahangirpuri Drain ( Rs.35.00 lakh)**

A scheme of "Remodeling of Jahangirpuri Drain" was prepared to improve the discharge carrying capacity of Jahangirpuri Drain catering to the catchment area of Azadpur, Model Town, Adarsh Nagar considering the available land width and the additional discharge of Dhirpur project area of DDA. A/A and E/S of the scheme was issued on 19/03/2004 for Rs.297.00 lakh. 89 % work has been completed and an expenditure of Rs.369.73 lakh has already been incurred upto 10<sup>th</sup> FYP. Due to increasing in cost of labour and material, the scheme is being revised and placed in EFC shortly to get the expenditure sanction to complete the balance work.

### **3. Procurement of Appropriate machinery including Dredger, draglines. Bulldozer, Hydraulic. Excavators for maintenance of drains (Rs.200.00 lakh)**

A Medium sized Draglines 5, Water Master Classic II/III 1, Dredge Utility Craft 2, One Hydraulic Excavator of 0.9 cum bucket capacity 2, Barge of 12 cm (18 MI) 1, Bull dozer of 180 H.P. 1, to purchased, Medium size Draglines 4, Large size Draglines 2, should also be purchased in the future.

### **3. Revamping of Drains (Rs.422..00 lakh)**

Major drains which are out falling into river Yamuna need to be protected from garbage by way of construction of boundary wall with expanded wire mesh on the top, along the drains and existing measures already taken on the bridges, shall be strengthened. In the first instance, two major drains have been chosen for executing this plan i.e. N.G. Drain and Supplementary Drain and works are in progress.

### **4. Drainage scheme of Shahdara area bounded in between S.M. Bund and L.F. Bund viz. Sonia Vihar and Rajiv Nagar**

The scheme envisages construction of pacca drain running along S.M. Bund and then flowing towards L.F. Bund Pump House along arterial highway and finally discharging into river Yamuna by pumping as well as by gravity. The scheme will provide drainage to the colonies like Rajiv Nagar, Sonia Vihar, CRPF Camp etc. Therefore, a scheme for the above area is under active consideration.

## **REMODELING/ IMPROVEMENT OF EXISTING DRAINS**

### **1. Remodeling of New Drain from RD 0m to RD 5400m (Rs. 50.00 lakh)**

New drain has its outfall into supplementary drain and runs along GT Karnal Road from Nangli Poonia to Bhalswa. This caters to the discharge of drain No. 6 as well as Bawana Escape. A sprawling industrial complex is being developed at Narela Township and storm water from this urbanized area will be discharged into new drain through Bawana Escape and drain No. 6. Thus New Drain required remodeling from its existing discharge capacity of 1168 cusecs to 5000 cusecs. A scheme amounting to Rs. 288.49 lakh for the said remodeling of new drain was approved and A/A & E/S accorded in the year March 2004. An expenditure of Rs.303.00 lakh has already been incurred and 88% of the work has been completed upto the end of 10<sup>th</sup> Plan.

### **2. Remodelling of Bawana Escape From RD 4830M TO RD 19790 M ((Rs.50.00 lakh)**

Bawana Escape Drain starts from Daryapur Jheel near village Harevali and outfalls into 'New drain' with an existing discharge of 3.54 cumecs at the starting point and 24.09 cumecs at its outfall point. DSIDC has taken up a project of development of industrial complex at Bawana to shift industries located in thickly populated residential areas of Delhi. To take care of additional discharge, it was decided to remodel the drain from RD 4830 m to RD 19790 m and a project estimate was accordingly prepared amounting to Rs.17.24 crores and A/A&E/S of the same amount received in February, 2002. An expenditure of Rs.1368 lakh has been incurred upto 10<sup>th</sup> plan.

### **3. Remodeling and lining of Palam Link Drain from RD 0 M to RD 1710M (Rs. 15.00 lakh)**

It is proposed to improve rural drainage system with the improvement in the water supply system to the rural areas and other facilities to the habitation in rural areas has suitably grown and sludge flow from the villages are on increase. The work was taken up in the year 2002-03 and 68% work has been completed and total expenditure of Rs.39.07 lakh has been incurred. Thereafter, the work was held up due to encroachment on both sides of the drain.

**4. Remodeling of Karari Suleman Nagar Drain from RD 3700 m to RD 6090 m (Rs.40.00 lakh)**

Karari Sulaman Nagar Drain passes through densely populated unauthorized colonies on both sides between RD 6090 M to RD 0 M. The entire sewage and sludge of these colonies are directly connected in the drain as a result the drain needs constant cleaning throughout the year between RD 6090 M To RD 3700 M the land available in approximate 33ft which is quite inadequate to hold the kachcha section of the drain, as practically there is no space available on both sides for its watch and ward and maintenance throughout the year. It was considered utmost urgent to have a pucca RCC through section for discharge of 110.00 cuses.

**5. Improvement of Bawana Drain Alipur Link Drain, Bankner Link Drain, KheraKalan drain, Khera Khurd Drain**

The storm water drains in the rural areas of Kanjhawla & Alipur Block were constructed to drain out the storm/rain water of the rural areas, so as to protect the lives & crops of the villages, from the fury of floods falling in the catchment areas of these drains, which cater to the entire rain water discharge of rural areas of both these blocks. Due to fast urbanization of the rural areas & development of unauthorized colonies & shifting of J.J. Clusters from city areas to the rural areas of Alipur & Kanjhawla Block, the discharge in the drains constructed by the deptt., has increased considerably. As such to accommodate this increased discharge in these drains, it has become necessary to remodel these drains so as to accommodate the increased discharge, so as to avoid any drainage congestion due to rain water in both the blocks causing loss to the lives and crops.

A/A&ES has been issued to the following two schemes:-

- a Improvement of Bawana Drain by constructing RCC through section from RD 9561 m to RD 11361 m (Rs.20.00 lakh)
  - b Improvement of Alipur Link Drain by constructing RCC through section from RD 0 m to RD 880 m (up to G.T. Road) (Rs.30.00 lakh)
6. Construction of RCC duct along Burari road from RD 433.50 M to RD 926 M (Rs.50.00 lakh)

Burari Creek caters for the discharge from the areas of Burari, Ibrahimpur, Nathupura, Kadipur etc. It has been observed that MCD is widening the Burari Bakhatwarpur Road, in view of increase in the intensity of vehicular traffic in the sector due to large scale development of unauthorized colonies in the Burari Jharoda Sector. It is therefore proposed to provide RCC duct section to the existing Kachcha section of drain to provide considerable improvement in this drain.

**7. Remodeling of Drain No.6 from RD 0 M To RD 14725 M ( Rs. 10.00 lakh)**

Delhi Development Authority has developed Narela Township to accommodate industrial as well as residential complex. Due to this an additional discharge of 1723 cusecs is proposed to be discharged into drain No. 6. As such, it is imperative to remodel drain No.6 to cater for the additional discharge contributed by D.D.A. The subject scheme of remodeling of drain No.6 is under process estimated cost of which works out to the Rs.744 lakh for which A/A & E/S has been sanctioned on 10.10.07.

**8. Construction of RCC drain from RD 495 M to RD 1130 M of link Drain No. II along Burari Bund (Road leading to Bio-Diversity Park) (Rs. 40.00 lakh)**

Delhi Development Authority who is maintaining the Bio-Diversity Park had already covered the drain upto Bio- Diversity Park. Present proposal is to cover the drain for remaining portion of link drain No.II along Burari Bund road leading to Bio-Diversity Park by way to constructing RCC box drain.

**9. Remodeling of Palam link drain from RD 0m to RD 1710m including construction of RCC through section from RD 150m to RD 350m and RD 850m to RD 1050m**

It is proposed to improve rural drainage system with the improvement in the water supply system to the rural areas and other facilities to the habitation in rural areas has suitably grown and sludge flow from the villages are on increase.

**10. Remodeling of Mundka peripheral Drain by Constructing R.C.C through section ( Rs.30.00 lakh )**

Mundka peripheral drain starts from the phirni Road of village Mundka and outfalls into Madanpur drain at 3850M. It is approx. 2345 metre long and is the draining life line of the village Mundka. This drain caters to the entire discharge of village Mundka and adjoining area of the drain. The present drain is having a kachcha section and is irregular in shape. Further the link road joining Mundka Phirni Road to Hirankudna Road which is running parallel to the drain is extensively damaged due to slugging of side slopes resulting in the blockage of the drain. It is therefore proposed that a RCC through section be constructed.

**11. Remodeling of Karari-Suleman Nagar Drain from RD 3700 m to RD 2445 m by construction R.C.C. through section (Rs. 10.00 lakh)**

Remodeling of balance portion of drain is to be undertaken i.e. from RD.3700 m to RD. 2400 m. The drain in this stretch is most vulnerable for dumping of malba, sullage and is under size. Due to kachcha section the cleaning of drain is not carried out effectively and such it is proposed to remodel the drain by construction RCC through section having divide wall to facilitate the cleaning of drain effectively.

**12. Construction of RCC covered storm water drain from pond in Kh. No.482 to existing outfall drain near Phirni road in village Tikri Kalan, Distt. West (Rs.30.00 lakh)**

There is no proper drainage system exists in Tikri kalan Village. In order to provide permanent solution to this problem, it has been decided to construct a RCC covered through section drain in a length of 965.00 metres which will off-take from pond in Kh.482 where the entire village waste accumulates and ultimately outfalls into Mungeshpur drain.

**13. Remodeling/Improvement of existing drains (Rs. 10.00 lakh)**

The existing storm water drains in the rural area of NCT of Delhi were constructed to drain out the storm/rain water of the rural areas, so as to protect the lives & crops of the villages, from the fury of floods falling in the catchment areas of these drains, which cater to the entire rain water discharge of rural areas of both these blocks. Due to fast urbanization of the rural areas & development of unauthorized colonies & shifting of J.J. Clusters from city areas to the rural areas, the discharge in the drains constructed by the deptt., has increased considerably. As such to accommodate this increased discharge in these drains; it has become necessary to remodel these drains so as to accommodate the increased discharge, so as to avoid any drainage congestion due to rain water in both the blocks causing loss to the lives and crops.

**OTHER SMALL DRAINAGE IMPROVEMENT SCHEMES**

**1. Construction of drain from Daryapur field to Ghoga Link Drain. (Rs. 20.00 lakh)**

This scheme provides for construction of a drain along the existing Daryapur Ghoga road to outfall into new Ghoga link Drain. The scheme has been approved and A/A & E/S amounting to Rs.49.21 lakh sanctioned. An expenditure of Rs. 23.10 lakh has been incurred as a land payment.

**2. Strengthening of banks of Jahangirpuri Drain between RD 0 m to RD 5470 m (Rs. 20.00 lakh)**

In light of the forthcoming Common Wealth Games, decision regarding beautification works has been taken by the Govt. of Delhi. As such this scheme stipulates the works on Jahangirpuri drain which will beautify the drain aesthetically by providing pitching on the side slopes of the drain.

**3. Remodelling and channelisation of T.D. No. I (Rs. 50.00 lakh)**

The T.D No. I is Katchcha section between RD 7970 m (PWD Bridge) to RD 10330 M (Arterial Highway) and is pucca section with R.R. Masonry Retaining walls on both sides in remaining section. The land reclaimed on right side of the drain shall be used for plantation and on the L/side is kept reserved of desilting operations.

**4. Improvement of Palm Drain from RD 6100 m to RD 8700 m. (Rs.60.00 lakh)**

Due to fast urbanization of the area, a number of thickly populated colonies have come up along its both banks. People residing nearby throw large quantity of garbage and other indiscriminate material in the drain causing siltation and obstructions in free flow of drain. At some locations even sewerages has also been directly connected by the people residing in unauthorized colonies along the drain. Due to walls constructed on both banks and adjoining colonies, there is practically no place to take out the desilted material, as such only floating material was got removed every year to maintain undisrupted flow during monsoons.

**5. Improvement of Nasirpur drain from RD 0m to RD 2900m. (Rs.35.00 lakh)**

Due to fast urbanization of the area, a number of thickly populated colonies have come up along its both banks. People residing nearby throw large quantity of garbage and other indiscriminate material in the drain causing siltation and obstructions in free flow of drain. At some locations even sewerages has also been directly connected by the people residing in unauthorized colonies along the drain. Due to walls constructed on both banks and adjoining colonies, there is practically no place to take out the desilted material, as such only floating material was got removed every year to maintain undisrupted flow during monsoons.

**6. Construction of pucca section of Bund Drain in a length of 185m from RD 45m to RD 190m and RD 220m to RD 260m. (Rs.23.00 lakh)**

Total length of bund drain is 3450m, out of which the drain has been constructed with a pucca rectangular section except in a length of 185m at its outfall. It has been decided to remove the encroachment on both sides of drain within a 10.00m width by constructing a pucca rectangular section of drain in brick masonry.

**PROTECTION OF GOVERNMENT LAND**

1. Construction of Stone Masonry Wall on both sides of Burari Drain from RD 0 m to RD 2280 m. (Rs. 60.00 lakh)
2. Protection of Govt. land by Constructing Boundary wall on both sides of feeder channel from Keshopur pump house to Tilangur pur Kotla Pump House. (Rs.60.00 lakh)
3. Construction of R.R. Masonry wall/Retaining wall on both sides of Jahangirpuri Drain (Rs.40.00 lakh)
4. Construction of Boundary wall along Land Boundary of various drains (Rs. 5.00 lakh each)

5. Construction of boundary wall on both sides of land boundary of Mungeshpur Drain RD 0M to RD 7740M. (Rs.50.00 lakh)
6. Construction of R.R. Masonry wall on land boundary of Naya Bans Link Drain from RD 810m to RD 3610m (Rs.40.00 lakh)
7. Construction of Boundary Wall on left side of Bund Drain in between RD 685 m to RD 720 m, RD 1185 m to RD 1365 m, RD 1500 m to RD 1700 m & RD 2300 m to RD 2835 m. (Rs. 2.00 lakh)
8. Construction of boundary wall along both side of B.C. Drain from RD 400m to RD 2780m and 6280m to 8550 m (Rs.40.00 lakh)
9. Construction of Boundary Wall on land boundary along the left bank of N.G. Drain from RD 0 m to RD 17905 m up to Chhawla Bridge (Rs.50.00 lakh)
10. Construction of Boundary wall along the right bank of N.G. Drain between RD 17905 m to RD 25450 m (Chhawla Bridge to Kakraula Village Bridge) (Rs.50.00 lakh)
11. Construction of boundary wall on both side land boundary on Mundella drain from RD 0 to RD 6950m (From NG drain to Ghummanhera-Najafgarh road culvert) (Rs. 40.00 lakh)
12. Construction of wall along land boundary of Jagatpur Bund on city side from RD 0M to RD 4388m (Rs. 40.00 lakh)
13. Protection of Govt. land from RD 34500m to RD 31825m of left bank of Supplementary Drain. (Rs. 30.00 lakh)
14. Construction of Boundary wall for protection of Govt. land along Left bank of Mungeshpur drain from RD 17120m to RD 18920m (Nizampur Bridge to Ghewra-Savda Bridge) (Rs. 50.00 lakh)
15. Construction of RR masonry retaining wall along Bijwason Bund No. 2 (Rs.30.00 lakh)

**C Liabilities on Completed Schemes (Rs.90.00 lakh)**

A budget head for meeting liabilities on completed scheme has been permitted in order to ensure that schemes/projects completed in the past years are not reflected in the plan document, only to cater for spill over liabilities.

**D Charged Expenditure (Rs. 10.00 lakh)**

Expenditure attributed to the directive of force of law will be meeting under this head..

## **E Water Devolvment Schemes**

### **1. Survey and model water studies (Rs.30.00lakh)**

### **2. Preparation of Master Plan for Drainage for N.C.T. of Delhi. (Rs.29.00 lakh)**

Irrigation & Flood Control Department of Delhi is the nodal agency for preparation of Master Plan for drainage of Delhi as per provisions contained in MPD.

The work of Master Plan for drainage will be initiated/commenced after finalization of zonal development plan by DDA. Earlier Master Plan of drainage for Delhi, was prepared in 1976 when the population of Delhi was about 68 Lakh. Thereafter population of the city has increased manifolds and a tremendous growth of the city taken place both in the shape of authorized & unauthorized developments and drainage system has never been reviewed/updated. Now, there is a need to review the Master Plan for Drainage, keeping in view the development and population projected in DDA's Master Plan for Delhi 2021.

An Apex Committee was constituted on 21.11.2005 to prepare Master Plan for drainage of Delhi to improve the drainage system, keeping in view the overall development of Delhi which has taken place since preparation of Master Plan for Drainage 1976.

### **2. Establishment of Quality Control and Material Testing Laboratory (Rs.1.00 lakh)**

Control of quality of different materials used in the construction of various projects is absolutely essential. Quality control also reduces construction cost by 5% to 10%.

## **F Trans Yamuna Area Dev. Board (Rs. 300.00 Lakh)**

In order to accelerate the development process in Trans-Yamuna area, a Board has been set up to guide & frame suitable programmes on the advice of concerned MLAs from Trans Yamuna Area. The Board provides additional funds to various agencies after identifying the issues connected with planned growth of the area with a view to reducing wide disparity in the existing infrastructure are enumerated & guidelines issued by the Board for bringing about improvement in the area.