

## MINOR IRRIGATION & FLOOD CONTROL

### MINOR IRRIGATION

#### 1. GROUND WATER RECHARGE AND WATER CONSERVATION (RS. 20.00 LAKH)

Irrigation in Delhi mainly depends upon ground water and partly upon surface water. Irrigation from the ground water is provided through shallow cavity and deep cavity tube-wells, whereas surface irrigation by way of utilizing treated effluent water from existing sewage treatment plants located at Burari, Okhla and Keshavpur. Water from Western Yamuna canal system under the control of Haryana Government is also utilized for irrigation purposes.

Due to uncontrolled exploitation of ground water resources and inadequate ground water re-charge measure, the ground water in Delhi has been continuously depleting over the last several years. The groundwater situation in Mehrauli and Najafgarh and Alipur Blocks are critical. In order to reverse this trend, the Department has taken-up number of water harvesting schemes such as creating pondage in the bed of N.G. Drain, making recharging pits/ trenches in Mungeshpur Drain, Bawana Escape, Mundella Bund etc.

Considering the importance of conservation and recharging of water level alongwith improvement in environmental condition in the rural areas, the Irrigation & Flood Control Department has prepared a scheme for development and protection of all water bodies in Delhi. Irrigation & Flood Control Department is the executing agency for such work.

In addition to the above, construction of artificial recharge well in the existing ponds at villages namely Jharoda Kalan, Dichaon Kalan, Surakpur in Najafgarh Block, Punjab Khore, Jat Khore, Mungeshpur, Katewara, Ghewra, Jaunti in Kanjhawala Block and Bankner, Khera Kalan, Khera Khurd, Holambi Khurd and Daryapur Kalan in Alipur Block will also be undertaken. This activity is on the advice of Central Ground Water Board, the water bodies in various villages of South, North-West and South-West Districts are quite useful for construction of artificial recharge well, so that the rain water after attaining a certain pondage level can percolate through these recharge wells and raise ground water table. During the annual plan 2008-09 an outlay of Rs. 5300.00 lakh has been for the above mentioned scheme against which an expenditure of Rs. 190.00 lakh likely to be incurred. For the annual plan 2009-10, an outlay of Rs. 20.00 lakh has been made for the above said programme.

### FLOOD CONTROL

The National Capital Territory of Delhi has been experienced 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 & Revised Outlay for 2008-09 and Approved Outlay for 2009-10 are given below.

(Rs.in lakh)

Sl. No.	Items / Major Activities	Approved outlay for 2008-09	Revised outlay / Anticipated Expenditure for 2008-09	Approved Outlay for 2009-10
1.	Embankment Schemes including Access Roads & Bridges, Anti-Erosion Works & Beautification Works	913.00	1188.00	951.00
2.	Major/Small Drainage Schemes			
a	Construction works	1787.00	1730.00	1300.00
b	Procurement of Heavy Machinery such as Bulldozers, Hydraulic excavators, Dredger, etc.	200.00		300.00
3.	Liability on completed schemes/works	90.00	170.00	64.00
4.	Charged Expenditure	10.00	12.00	5.00
5.	Survey/Model Studies (Water Development/Drainage)	60.00	5.00	100.00
6.	Trans Yamuna Area Development Board Drainage Schemes	300.00	1000.00	1000.00
	<b>Total</b>	<b>3360.00</b>	<b>4105.00</b>	<b>3720.00</b>

#### A. EMBANKMENT SCHEMES

1. Construction of Embankment on Right Bank of River Yamuna in between Nizamuddin Railway Bridge and Nizamuddin Road Bridge (Rs.1.00 lakh)

In the wake of ensuing Common Wealth 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.

A provision of Rs.1.00 lakh has been kept in Annual Plan 2009-10.

2. Construction of 1.80m high RCC retaining wall on the Left Bank of Supplementary Drain from 50' wide Road to Nihal Vihar Bridge at RD 24300m (Rs.30.00 lakh)

The scheme for construction of retaining wall on the left bank of Supplementary Drain from 50' wide road to Nihal Vihar Bridge has been prepared to widen the bank and to avoid the accidents due to high intensity of traffic plying over the existing road and to facilitate the residents of the area to have better connectivity between Paschim Vihar and Nihal Vihar. Presently work is in progress.

A provision of Rs.30.00 lakh has been kept in Annual Plan 2009-10.

3. Improvement of berms and side slope of Left Bank of Supplementary Drain (Wazirabad RD 1120m to Badli Bridge RD 9960m) (Rs.30.00 lakh)

The present scheme provides brick masonry profile on drain side slopes of the Supplementary Drain at a distance of 5m centre to centre along with the toe wall and patra. Besides this, brick on edge flooring for lining work has been provided to check eroding of side slopes, as the drain side slopes are 0.6m above the F.S.L. of the drain and drainage chutes to drain off water during rain has also been included in the scheme.

A provision of Rs.30.00 lakh has been kept in Annual Plan 2009-10.

4. Improvement and Strengthening of Side Slopes and Banks between RD 22471m to RD 16436m of Supplementary Drain (Rs.40.00 lakh)

The scheme envisages strengthening of the bank of supplementary drain by providing flush pointing on stone pitching between RD 22471 m to RD 16436 m on either sides after removal of unwanted vegetation and also repair of damaged pitching wherever necessary. The objective of the scheme is to stop erosion of the side slopes and top patra. The proposed scheme shall also help in beautify of the drain.

A provision of Rs.40.00 lakh has been kept in Annual Plan 2009-10.

5. Improvement and Strengthening of Side Slopes and Banks between Basaidarapur to Outfall (RD 45140m to RD 57140m) of Najafgarh Drain (Rs.20.00 lakh)

The scheme envisages strengthening of the bank of Najafgarh Drain by providing flush pointing on stone pitching between Basaidarapur to its outfall on either sides after removal of unwanted vegetation and also repair of damaged pitching wherever necessary. The objective of the scheme is to stop erosion of the side slopes and top patra. It will also provide a stable foundation to the walls being constructed providing during revamping of the N.G. drain. The proposed scheme shall also help in beautifying the drain.

A provision of Rs.20.00 lakh has been kept in Annual Plan 2009-10.

6. Cartage of Earth from Right Bank of Najafgarh Drain (D.S of Road No.37) to Left Bank of Supplementary Drain between RD 25075m to RD 26060m(Rs.10.00 lakh)

The scheme is for cartage of earth from right bank of Najafgarh Drain (D/S of Road no.37) to left bank of Supplementary Drain between RD 25075m to RD 26060m. Recently to avoid the direct throwing of the garbage in the drain,a boundary wall has been constructed under the scheme of revamping of supplementary drain from RD 34500m to RD 0m. Due to construction of wall in this reach, the width of the bank has been reduced and required widening by banking from the earth available on Najafgarh Drain from de-silting by departmental draglines. The available earth is proposed to be carted from right bank of NG Drain, D/S of Road No.37.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

7. Widening of Left Embankment by Earth filling from Jagatpur Bridge (RD 1550m) to Wazirabad Bridge (RD700m) of Supplementary Drain (Rs.19.00 lakh)

The width of the left bank in this reach is 3.50m which is insufficient for smooth movement of inspection vehicle as well as other vehicles using this road. Supplementary Drain is very deep and any mis-happening cannot be ruled out and there remain chances of falling down of the vehicles which may lead to fatal accidents. Accordingly the scheme for its widening has been formulated. In this scheme , provision for supplying of earth to widen the bank from its existing width of 3.50 metre to 8.50m has been considered.

A provision of Rs.19.00 lakh has been kept in Annual Plan 2009-10.

8. Providing Plinth Protection and Earth Skirt on the Drain side of Wall on both Banks of N.G. Drain (from Kakraula to Outer Ring Road (RD 30160m to RD 40680m) and from Outer Ring Road to Basidarapur (RD 40680m to RD 45316m) (Rs. 40.00 lakh)

The department has taken up the project of Revamping of N.G. drain in view of common wealth Games and is being monitored at highest level. In this project 2.7 m high wall is being constructed along both banks of N.G. drain so that drain could be protected from throwing of malba garbage etc. Since the wall is being constructed along the edge of the bank, there is a possibility of earth getting washed away during rain resulting in the collapse of this wall. To provide safety to the wall, it is proposed to provide earth skirt and plinth protection on drain side.

A provision of Rs.40.00 lakh has been kept in Annual Plan 2009-10.

9. Making Plinth Protection along the Wall Constructed under Revamping of Supplementary Drain (Rs. 10.00 lakh)

A wall is being constructed along the edge of the bank and there is possibility of earth getting washed away during rains resulting in the collapse of this wall. To provide safety to the wall it is necessary to provide earth skirt and plinth protection on drain side.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

## **B. MAJOR DRAINAGE SCHEMES**

### **1. Construction of Supplementary Drain to N.G Drain (Rs.100.00lakh)**

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 it's out-falling. 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 90% has been achieved comprising excavation of the drains upto SSL 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 has been completed and remaining is in progress. An expenditure of Rs.11603.15 lakh has already been incurred.

A provision of Rs.100.00 lakh has been kept in Annual Plan 2009-10.

### **2. Remodeling of Jahangirpuri Drain (Rs.16.00 lakh)**

A scheme of "Remodeling of Jahangirpuri Drain" was prepared to improve the discharge carrying capacity of Jahangirpuri Drain catering to the catchments area of Azadpur, Model Town, Adarsh Nagar and considering the available land width and the additional discharge of Dhirpur project area of DDA. 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 has been revised.

A provision of Rs.16.00 lakh has been kept in Annual Plan 2009-10.

### **3. Procurement of Appropriate Machinery including Dredger, Draglines. Bulldozer, Hydraulic. Excavators for maintenance of drains (Rs.300.00 lakh)**

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 purchase Medium size Draglines 4, Large size Draglines 2, will also be purchased in the future.

A provision of Rs.300.00 lakh has been kept in Annual Plan 2009-10.

#### 4. Revamping of I&FC Drains (Rs.443.00 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. A provision of Rs.422.00 lakh in the Annual Plan 2008-09 against which an expenditure of Rs.650.00 lakh is likely to be incurred. A wall in a length of 14.00 Kms. has been completed. A provision of Rs.443.00 lakh has been kept in Annual Plan 2009-10.

#### 5. Revamping of I&FC Drains (Phase-II)

In view of the Common Wealth Games to be held in 2010 in Delhi, Chief Secretary Govt. of Delhi has desired that major drains which are out falling into River Yamuna should be protected from garbage by way of construction of boundary wall on both side and additional measures taken on bridges by strengthened existing railings and erecting wire mesh fencing]/netting. It was decided to take up work on Najafgarh Drain, Supplementary drain and others drains of I&FC department which have not been covered under phase-I programme. Accordingly, separate schemes have now been taken up.

- a. Revamping of Najafgarh Drain from Amberahi Bridge to Kakraula Bridge (RD 22435m to RD 30180m) (Rs. 100.00 lakh)
- b. Revamping of left out portion of Supplementary Drain from Kakraula Bridge to its outfall into River Yamuna (Rs.95.00 lakh)
- c. Construction of wall on right & left side of Trunk Drain No.1 from T-Junction Point to Johripur Bridge (i.e. RD 11300m to RD 12230m) (Rs.41.00 lakh)
- d. Construction of wall on right side of Trunk Drain No.1 from Johripur to U.P. Border (i.e. RD 12230m to RD 13387m)(Rs.20.00 lakh)
- e. Construction of wall on left side of Trunk Drain No.1 from Johripur to Shiv Vihar Bridge (i.e. RD 12230m to RD 13000m)(Rs.20.00 lakh)
- f. Construction of wall on both banks of Escape Drain No.2 from RD 0m to RD 450m. i.e. from its outfall into T.D. No.1 to Loni Road (Rs.30.00 lakh)
- g. Providing and fixing steel railing for netting of bridges across of Najafgarh Drain (14 nos. Bridges) (Rs.25.00 lakh)
- h. Revamping of Supplementary Drain from Vikaspuri Bridge to RD 28080m to MID Aqueduct RD 26060m. (Rs.5.00 lakh)
- i. Strengthening and beautification of remaining old walls of Najafgarh Drain from Bharat Nagar Bridge to Mall Road Bridge (Rs 5.00 lakh)

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

1. Remodeling of Bawana Escape from RD 4830 m to RD 19790 m (Rs.20.00 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. DSIIDC 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.1368.00 lakh has been incurred upto 10<sup>th</sup> plan.

A provision of Rs.20.00 lakh has been kept in Annual Plan 2009-10.

2. Remodeling and lining of Palam link drain from RD 0m to RD 1710m including construction of R.C.C Through section from RD 150 M to RD 350 M & RD 850 M to RD 1050 M (Rs.5.00 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 total expenditure of Rs.39.07 lakh has been incurred and 68% work has been completed. Thereafter, the work was held up due to encroachment on both sides of the drain.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

3. Remodeling of Karari Suleman Nagar Drain from RD 3700 m to RD 6090 m (By constructing RCC through Section RD 3700m to RD 6090m) (Rs.5.00 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 katcha 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 cuses.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

4. Improvement of Bawana Drain by constructing RCC through section from RD 9561 m to RD 11361 m (Rs.10.00 lakh)

Bawana Drain off takes from village Dariyapur Kalan at the outfall of pipe drain and passes through Bawana, Nangal Thakran, Majra Dabas, Chandpur and

finally outfalls in Mungeshpur Drain in village Kanjhawala. Large area of village Dariyapur Kalan facing flood situation in monsoon season. And it was experienced that the run off was increased in the catchment due to urbanization of villages Dariyapur Kalan and Bawana etc. overloading the existing section of the drain.

A provision of RCC through section from RD 9561m to RD 11361m along with re-construction of existing culverts in this portion has also been made in the scheme. As such, a project has been taken up for construction.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

5. Improvement of Alipur Link Drain by constructing RCC through section from RD 0 m to RD 880 m (up to G.T. Road)(Rs.10.00 lakh)

Presently, the drain has an earthen section with a capacity of 30 cusecs which was designed to cater the storm water of the fields of the area wherein no regular de-silting was required, the catchment area being rural one. However, with the passage of time, population of the village has increased manifold and the people have built their houses and godowns etc. adjacent to both banks of this drain. There is no sewage system in the village, thus the sullage /waste water of residences is also being discharged in this drain. Moreover, due to non-existence of dalaos in this village, the residents of this area dispose off their house waste/garbage etc. directly into this drain. In most of the portion, the residents of the area have connected their latrines directly into this drain. Factory waste, (unhygienic material) is also being thrown into this drain. Due to these reasons, the drain always remains silted up and the water flows above the designed F.S.L. even during the dry seasons which causes unhygienic conditions in the area. The existing earthen section of the drain is very irregular and buildings exist in the close vicinity of its both banks, as such it is proposed to construct a 3.5m wide RCC through section from RD 0m to RD 880m as per design requirements with a discharge of 154 cusecs.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

6. Construction of RCC Duct along Burari Road from RD 433.50 m to RD 926 m (Rs.5.00 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 Katcha section of drain to provide considerable improvement in this drain.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

7. Remodeling of Drain No.6 from RD 0 m to RD 14725 m (Rs.5.00 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 issued on 10.10.07.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

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.10.00 lakh)

During the review meeting by the Cabinet on 13.06.2005, it was decided to cover small drain leading to Bio-Diversity Park with the aim to ensure minimum open drain sights in Delhi. 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.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

9. Remodeling of Mundka Peripheral Drain by Constructing R.C.C through section (Rs. 5.00 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 kaccha 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 sloughing of side slopes resulting in the blockage of the drain. It is therefore proposed that a RCC through section be constructed.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

10. Remodeling of Karari-Suleman Nagar Drain from RD 3700 m to RD 2400 m by construction RCC through section (Rs.5.00lakh)

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 kaccha 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.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

11. 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.5.00 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 metres which will off-take from pond in Kh.482 where the entire village waste accumulates and ultimately outfalls into Mungeshpur drain.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

12. Beautification of Left Bank of Supplementary Drain from Wazirabad (RD 1120m to Badli Bridge (RD 9960m)(Rs.5.00 lakh )

The site has been inspected by Sh. R. Narayanswami, Former Chief Secretary, Delhi/Special Adviser, Common wealth Games on dated 31.12.07 and it has further been inspected by Hon'ble Development Minister alongwith senior officers of MCD, PWD, I&FC etc., wherein it was emphasized to beautify the above reach. Keeping in view the above, scheme for its beautification has been formulated in which provision of plantation of trees and shrubs along the left banks of Supplementary Drain on the drain side and on the side slopes of the embankment between the panels has been taken. Further provision of doob grassing over the berm in width of 20 metre has also been considered.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

13. Improvement of Outfall Point of Jahangirpuri Drain with N.G. Drain. (Rs.5.00 lakh )

The Jahangirpuri Drain at its outfall is flowing in a direction opposite to that of N.G. Drain with a tendency of the water of N.G. Drain to enter into Jahangirpuri Drain in reverse direction. Thus retarding the flow/velocity of Jahangirpuri Drain and incase of high floods in river Yamuna causing back flow and water remains stagnated till the level of N.G. Drain recedes. In order to solve the problem of back flow, drainage congestion, stagnation/ ponding and siltation in outfall reaches of Jahangirpuri Drain, it is proposed to realign the outfall reach of the drain so as to provide a smooth influence of the two drains. The scope of work includes dismantling of the existing left bank of Jahangirpuri Drain alongwith its pitching/lining work and restore them after providing a leftward curve towards the flow of N.G. Drain.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

14. Plantation of Tree on Left Bank of Supplementary Drain from Kakraola Bridge to Ranhola Bridge. (Rs.5.00 lakh )

The Ex. Chief Secretary Delhi & Advisor to Common Wealth Games during his various visits of Supplementary Drain on the work of revamping from Kakraola to its outfall, gave directions for laying special emphasized on tree plantation along the banks of Supplementary Drain. Keeping the above in view, it is proposed to plant 10000 trees/shrubs on the left bank of Supplementary Drain from Kakraola Bridge to Ranhola Bridge. For execution of this project, the Horticulture Department, Govt. of NCT of Delhi has been consulted. After inspection of site, Deputy Director (Hort.) submitted their estimates for planting 10000 trees in the land made available by this

department. Funds are to be made available by the I&FC Deptt. The scheme provides planting 10000 trees including its maintenance for three years, on the left bank of Supplementary Drain.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

#### **D. OTHER SMALL DRAINAGE IMPROVEMENT SCHEMES**

1. Strengthening of banks of Jahangirpuri Drain (between RD 0 m to RD 5470m) (Rs.15.00 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.

A provision of Rs.15.00 lakh has been kept in Annual Plan 2009-10.

2. Improvement of Nasirpur drain from RD 0m to RD 2900m. (Rs.15.00 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. Proposal has been prepared to clear this silt up to DBL.

A provision of Rs.15.00 lakh has been kept in Annual Plan 2009-10.

3. 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.20.00 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.

A provision of Rs.20.00 lakh has been kept in Annual Plan 2009-10.

#### **E. ACCESS ROADS & BRIDGES**

1. Const. of Additional double lane RCC Bridge at RD 24309 m across Supplementary Drain U/S of Nihal Vihar Bridge (Rs.75.00 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. Accordingly, the scheme for the construction of double lane RCC bridge amount to Rs.164.30 lakh has been cleared by TAC and Flood Control Board.

A provision of Rs.75.00 lakh has been kept in Annual Plan 2009-10.

2. Construction of two Lane Bridge across Supplementary Drain at RD 21350 m near village Sultanpur Majara. (Rs.60.00 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.

A provision of Rs.60.00 lakh has been kept in Annual Plan 2009-10.

3. Construction of two lane RCC Bridge connecting Budh Vihar and Vijay-Vihar at RD 18750 m of Supplementary Drain. (Rs.50.00 lakh)

Number of bridges have been constructed on this drain however, at RD 18750m 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 19362m to cross the Supplementary Drain incurring huge extra expenditure on fuel etc.

A provision of Rs.50.00 lakh has been kept in Annual Plan 2009-10.

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

During the meeting held on 12.01.2007 in the chamber of Hon'ble Minister of Development Govt. of Delhi regarding issues related to Vishawas Nagar, Assembly Constituency, 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.

A provision of Rs.30.00 lakh has been kept in Annual Plan 2009-10.

5. 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.

There is a provision of Rs.40.00 lakh exists in AP 2008-09 against which an expenditure of Rs.60.00 lakh is likely to be incurred and a provision of Rs.40.00 lakh is proposed in AP 2009-10.

6. 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.100.00 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 Munngeshpur drain between RD 0m to RD 2740m. Beyond RD 2740m, the berms of the kacha 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.

A provision of Rs.100.00 lakh has been kept in Annual Plan 2009-10.

7. Demolishing and reconstruction of old culvert adjacent to New RCC culvert at RD 6495m of Burari Creek. (Rs.10.00 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.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

8. Improvement of road on left bank of Supplementary Drain between Wazirabad and New drain. (Rs.85.00 lakh)

The scheme is for Improvement of road on Left bank of Supplementary Drain between Wazirabad to New Drain. This road has often been used by light as well as heavy vehicles to avoid traffic congestion on the outer ring road. Besides this, the road also serves the purpose of second line of defence during the high floods. Due to continuous plying of various types of vehicle, this road has been damaged and pot holes have been developed which requires repair. Keeping this in view, the present

scheme for its improvement has been formulated. In this scheme provision for filling of pot holes, 4 cm thick bitumastic sheet, 0.60m cement concrete pavement and kerb stones along the road.

A provision of Rs.85.00 lakh has been kept in Annual Plan 2009-10.

9. Construction of left bank of Supplementary Drain between RD 30850m to RD 34500m. (Rs.30.00 lakh)

The scheme is for re-sectioning of left bank of supplementary drain and construction of inspection path from RD 30850m to RD 34500m. During excavation of supplementary drain, the excavated earth was deposited off on left bank in the shape of spoil bank. The deposited earth has been utilized for different departmental works in past. Now it is required to maintain proper bank for watch and ward of bank as well as of inlets which are out falling in the supplementary drain. Keeping this in view, it is proposed to lower the bank by 1.00m by excavation of earth and utilized the excavated earth for filling of rain cuts and also to maintain the width of the bank for plying of inspection vehicles. A WBM surface of 4.25m width will be provided on the top of bank.

A provision of Rs.30.00 lakh has been kept in Annual Plan 2009-10.

10. Demolition and Re-construction of Bridge at RD 4165m of Bawana Escape. (Rs.30.00 lakh)

Bawana-Narela road is crossing the Bawana Escape at RD 4165m. A box culvert of size 1.35m X 2.00m exists on a road width of 7.50m. A work of remodeling of bridge on Bawana distributory canal at this location is being constructed by Haryana Irrigation Department as a deposit work of Delhi Rural Development Board, Govt. of NCT of Delhi. The Bawana Escape drain of this department is running parallel to Bawana distributory canal and thus needs to construct a bridge of similar carriageway at this location to distributory bridge for smooth running of traffic. The proposed bridge having a deck size of 19.70m X 8m will be rests on RCC abutments on both sides of drain.

A provision of Rs.30.00 lakh has been kept in Annual Plan 2009-10.

11. Construction of 4.25M bituminous road on the right bank of Bawana Escape from RD 19000M to RD 19500M (Rs.10.00 lakh)

The scheme has been prepared to construct a 4.25M wide bituminous road on the right bank of Bawana Escape from RD 19000M to RD 19500M. There is no inspection road on this drain and in the absence of any approach, the inspection can not be carried out in this area is also surrounding Bawana Escape in the said work is rapidly getting urbanized. The residents as well as Area M.L.A. have demanded to construct the said road so that necessary approach could be available on the drain.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

12. Construction of 2- lane Skew RCC Bridge across Jahangirpuri Drain at RD 2800m. (Rs.60.00 lakh)

DDA has planned a residential colony on the left side of Jahangirpuri drain, under Dheerpur Development Scheme. On right side of drain, there is already a developed colony name 'Nirankari Colony' adjacent to it. To give better connectivity between Dheerpur Development Scheme and Niranakari Colony a two-lane skew bridge is proposed. Keeping in view the demand and the necessity scheme has been taken up.

A provision of Rs.60.00 lakh has been kept in Annual Plan 2009-10.

13. Demolishing and re-construction of culvert across Nangloi Drain outfalling on Left Bank of Supplementary Drain at RD 14600m (Rs.10.00 lakh)

Due to construction of road on the left bank of Supplementary Drain from RD 16436m to RD 14100m, heavy traffic is likely to ply over it. The existing culvert on Nangloi Drain at RD 14600m is dilapidated condition and unsafe for the same, which requires to reconstruct after its demolishing. Hence work for construction of culvert has been taken up. The culvert will be constructed with 1000mm dia 15m long RCC pile of RCC 1:1:5:3 mix, pile cap, abutment/wing wall, deck slab & parapet together with protection work at its outfall point into Supplementary Drain.

A provision of Rs.10.00 lakh has been kept in Annual Plan 2009-10.

14. Construction of Box Culvert for carrying discharge from Rithala Treatment Plant No 2 on Left Bank out falling into Supplementary Drain at R D 15100 M. (Rs.12.00 lakh)

The work of construction of road from RD 16436m to RD 14100m on left bank of Supplementary Drain is in progress and in this reach Rithala Treatment Plant No 2 also falling, but there is no proper oufall for waste water coming from this plant through RCC open duct up to the land boundary of Supplementary Drain. For providing a proper outfall for this waste water it is necessary to construct a culvert including outfall structure at RD15100m on left bank of Supplementary Drain.

A provision of Rs.12.00 lakh has been kept in Annual Plan 2009-10.

15. Construction of inspection Path on right bank of supplementary Drain from RD 10840M to 11730M. (Rs.3.00 lakh)

Provision for this work was taken in the revised scheme of supplementary Drain but the Scheme of supplementary drain has already been exhausted. Portion on right bank of Supplementary Drain from RD10840M to 11730M is very venerable since Delhi Jal Board discharges their waste water of Haiderpur Treatment Plant at up-stream of Western Yamuna canal and there is no proper approach for this. In order to make inspection and maintenance convenient it was felt necessary to frame a scheme for construct a WBM with Bajri Path over this bank in this reach.

A provision of Rs.3.00 lakh has been kept in Annual Plan 2009-10.

16. Construction of two lane RCC Bridge at RD 4028m (Rawta) on Najafgarh drain (Rs.90.00 lakh)

The existing old single lane bridge at village Rawta on Najafgarh drain was constructed long back in mid eighties as a village road bridge. This bridge is now catering to entire heavy traffic of the vital important link roads joining Najafgarh area on one side and Rawta and Haryana on other side. In changed scenario the bridge could not withstand the present traffic load and there are instances of approach slab and deck slab settled/ damaged by passing heavy traffic continuously. It is proposed to construct new two Lane Bridge. Simultaneously this old bridge should be used to accommodate various service lines.

A provision of Rs.90.00 lakh has been kept in Annual Plan 2009-10.

17. Construction of two lane RCC Bridge at RD 22435m (Amberahi Bridge) on Najafgarh Drain (Rs.20.00 lakh)

Amberahi village Bridge across Najafgarh drain was constructed in mid eighties as a village road bridge. This existing single lane bridge is to cater for increased and heavy traffic of the vital important link road joining Najafgarh area on one side and Dwarka on other side. In changed scenario, now, the existing single bridge could not with stand the present heavy traffic, due to the reason there are instances of approach slab and deck slab had settled/damaged.

Keeping in view these points it is proposed to construct a new two Lane Bridge adjoining to the existing bridge which will be utilized for laying various service lines.

A provision of Rs.20.00 lakh has been kept in Annual Plan 2009-10.

18. Construction of two lane RCC Bridge at RD 28180m (Kakraula Village Bridge) on Najafgarh drain. (Rs.20.00 lakh)

Kakraula village Bridge across Najafgarh drain was constructed in mid eighties as a village road bridge. This existing single lane bridge is to cater for increased and the entire heavy traffic of the vital important link road joining entire Najafgarh area on one side and Dwarka on other side. In changed scenario, now, the existing single lane bridge could not with stand the present heavy traffic due to the reason there are instances of approach slab and deck slab had settled/damaged.

Keeping in view these points it is proposed to construct a new two Lane Bridge adjoining to the existing bridge which will be utilized for laying various service lines.

A provision of Rs.20.00 lakh has been kept in Annual Plan 2009-10.

19. Restoration and construction of inspection road on Right Bank of Mungeshpur drain from RD 2740m (Najafgarh-Nangloi Bridge) to RD 9024m (Jharoda Bridge) in NG Block. (Rs.5.00 lakh)

Mungeshpur drain from RD 0m to RD 10362m under the jurisdiction of this division traverses through various village such as Nangli Sakrawati, Barprola, Dichaon Kalan, Jharoda Kalan and outfall into Najafgarh drain near Kakraula Regulator. A 3.60m wide bituminous road exists on both banks of Mungeshpur drain between RD 0m to RD 2740m. The right bank is Kachcha between RD 2740m to RD 9024m. Beyond RD 2740m the Kachcha Right bank is not jeep-able as the road berms are deteriorated in due course of time and are uneven. The maintenance of drain become very difficult during monsoon season, as such need for restoration and construction of inspection road arises.

A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

#### **F. ANTI EROSION (RS.1.00 LAKH)**

In order to protect the left and right bank of river Yamuna against the erosion a number of works are required to be taken up on the emergency basis every year to check and control the further erosion in the future. A token provision of Rs.1.00 lakh is proposed in AP 2009-10.

#### **G. PROTECTION OF GOVERNMENT LAND**

For planning and construction of drains with proper embankments and space for movement, land had been acquired by Irrigation & Flood Control Department for construction of a large number of major and minor drains. As such it has become essential to protect the Government land belonging to Irrigation & Flood Control Department from encroachment by suitable measures viz. constructing walls ,fencing along the boundaries of drains wherever required and feasible. The scheme wise details are under:-

1. Construction of Stone Masonry Wall on both sides of Burari Drain from RD 0 m to RD 2280 m. (Rs.20.00 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.20.00 lakh )
3. Construction of R.R. Masonry wall/Retaining wall on both sides of Jahangirpuri Drain (Rs.Rs.30.00lakh)
4. Construction of boundary wall on both sides of land boundary of Mungeshpur Drain RD 0M to RD 7740M. (Rs.20.00 lakh)
5. Construction of R.R. Masonry wall on land boundary of Naya Bans Link Drain from RD 810m to RD 3610m. (Rs.1.00 lakh)

6. 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)
7. Construction of boundary wall along both side of B.C. Drain from RD 400m to RD 2780m and 6280m to 8550 meter (in Delhi Territory). (Rs.10.00 lakh)
8. Construction of Boundary all on land boundary along the left bank of N.G. Drain from RD 0 m to RD 17905 m up to Chhawla Bridge. (Rs.30.00 lakh )
9. 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.27.00 lakh)
10. 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.20.00 lakh)
11. Construction of wall along land boundary of Jagatpur Bund on city side from RD 0M to RD 4388m. (Rs.20.00 lakh )
12. Protection of Govt. land from RD 34500m to RD 31825m of left bank of Supplementary Drain. (Rs.20.00 lakh )
13. 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.10.00 lakh)
14. Construction of RR Masonary wall for protection of Govt. land of Alipur Link Drain from RD 0m to RD 880m(Rs.20.00 )

#### **H. LIABILITIES ON COMPLETED SCHEMES(RS.64.00 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. Provision of Rs.90.00 in Annual Plan 2009-10 against which an anticipated expenditure of Rs.150.00 lakh likely to be incurred. A provision of Rs.64.00 lakh is being proposed Annual Plan 2009-10.

#### **I. CHARGED EXPENDITURE(RS.5.00LAKH)**

Expenditure attributed to the directive of force of law will be met under this head. A provision of Rs.5.00 lakh has been kept in Annual Plan 2009-10.

#### **J. WATER DEVOLVEMENT SCHEMES**

1. Survey, Model Study and Hydrological Data Collection & Investigation (Covering of Drains/Nallahs) (Rs.20.00 lakh)

2. Preparation of Master Plan for Drainage for N.C.T. of Delhi (Rs.79.00 lakh)

Earlier Master Plan of drainage for Delhi was prepared in 1976 when the population of Delhi was about 68.00 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. It was explained that 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 and reflected in MPD-2021. 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-2021.

The work of Master Plan for Drainage will be initiated/ commenced after finalization of zonal development plans by DDA.

A provision of Rs.79.00 lakh has been kept in Annual Plan 2009-10.

3. 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%.

A provision of Rs.1.00 lakh has been kept in Annual Plan 2009-10.

**TRANS YAMUNA AREA DEVELOPMENT BOARD (Rs.1000.00 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 issue 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.

A provision of Rs.1000.00 lakh has been kept in Annual Plan 2009-10.