

There's Nothing August

Nidhi Jamwal

JULY 26, 2005: It began raining at 11 am. In the next 24 hours, India's most populous city received 944 mm of rainfall. The resultant flood killed 450 people (officially), and caused financial damage worth about Rs 4,000 crore. For three days, the water didn't recede.

AUGUST 2005: Fever, malaria, dengue, leptospirosis, diarrhoea, cholera. Inquiries, press conferences, public hearings, committees, commissions, terms of reference. Mumbai is back to normal. But Mumbai is asking: how did it happen? Why? NIDHI JAMWAL examines these questions in great detail.

The flood was foretold. The disaster, in all its dimensions — perhaps not the scale — was already mapped. For years now, Mumbai's politicians — of all hues — have ignored the signs: the crumbling drainage system; the built-over natural drainage; the poisonous landfills where garbage stands 8-10 metres high, exuding poison; the untreated sewage, shamelessly dumped into the Arabian Sea.

Post 26/7, will anything change? Might not. For like the flood, one kind of future for the city has also been foretold. Says *Transforming Mumbai into a World-Class City: First Report of the Chief Minister's Task Force*: "Our vision is for Mumbai to possess, by 2013, the twin elements of a world-class city: dynamic, job-creating growth and a comfortable quality of life. Our ten-year vision is for Mumbai to be globally distinctive in economic growth and healthcare, and to be in line with global best practice in other parameters like housing and transportation."

Greater Mumbai (GM) is an amalgam of 11 islands reclaimed and connected over 100 years or so; seven islands comprise the City and four the suburbs. Spread over 468 sq km, with a population of over 13 million and a population density as high as 27,120 per sq km, India's most populous city has slums that accommodate, the 2001 census says, over 49 per cent of the population — one in two persons.

GM falls under the jurisdiction of the Municipal Corporation of Greater Mumbai (MCGM), responsible for its planned development and basic infrastructure. But there also exists the Mumbai Metropolitan Region Development Authority (MMDRDA), under the state's urban development ministry; its job is to develop the entire 4,355 sq km Mumbai metropolitan region (MMR), which includes GM. The former is with the Shiv Sena; the state government — Congress-NCP — controls the latter. Thus, jurisdiction is always a political scuffle. Moreover, "On the one hand, the act governing MCGM is as old as 1888; on the other, MMRDA has acted more like a real estate agency than a planning body. Initially, it had no justification to exist; then, it started its business by reclaiming Mithi's wetland and selling plots at the Bandra-Kurla complex," says Shekhar Krishnan, executive member of Mumbai based Collective Research Initiatives Trust.

In 1996, H P Samant, a geologist teaching in St. Xavier's College, Mumbai, completed an in-depth study that showed Mumbai was heading for built-up disaster. In 1925, 60 per cent of land in Mumbai was forest/agricultural land. By 1994,



Desilting and widening of part of the Mithi was completed in the first phase. Work on Phase II has now been extended by three years. Source: Author

this had shrunk to 30 per cent. 1925-1994, mangrove jungles reduced from 28 per cent to 18 per cent. In the same period, the built-up area shot up from 12 per cent to 52 per cent (see maps: Built-up and choking).

Samant's study highlighted how the six basins of various streams that criss-crossed Mumbai and flowed into four creeks were turned into roads, buildings and slums. The Mithi river basin suffered the most (*see table: Built up*).

1996-2011: a daft regional plan

The latest statutory development plan for the MMR is prepared by the MMRDA and is called the *Draft Regional Plan for Bombay Metropolitan Region, 1996-2011*. It has turned the planning process into anarchy.

The 1973 regional plan for the Mumbai Metropolitan Region was the current plan's precursor. It recommended Greater Mumbai's population be restricted to 7 million. It said new industries, offices and commercial establishments not be set up. The current plan acknowledges that "20 years after [the 1973 Plan], Mumbai continues

to reel under poor infrastructure and high level of environmental pollution". But this acknowledgment is rhetorical. For, it also says the approach "is to facilitate their [cities like Mumbai] development through provision of infrastructure, and by removing any obstacles in the path of their economic progress...". According to the 1996-2011 plan, cities like Mumbai have "important role as generators of national wealth". Plan 1996-2011 also demands permission to adopt land-use policies that respond to market potential.

The plan is downright controversial. It recommends dumping of waste in low-lying areas along creeks; this "will result in possible trade-off". The plan says: "... it will be appropriate to allow salt pans, which anyway are not wetlands in their natural state, to be used for... critical urban uses...". Explains Samant, "This is ridiculous. It is technically wrong and has no ground in a court of law. Who says saltpan lands are not wetlands? Wetlands are all those areas where seawater intrudes when there is a high tide." Further, Maharashtra has slyly added a new category of saltpan lands as 'saltpan land not in coastal regulation zone', which, claims Samant, needs to

be questioned in the court of law. Builders are demanding control of saltpan lands adjacent to Mumbai; they wish to house the poor there. Even the chief minister's task force February 2004 report on *Vision Mumbai: Transforming Mumbai into a world-class city* says slum dwellers can be moved to the "saltpan lands" and to the "current No Development Zones (NDZ)". Even after the July 26 deluge, chief minister Deshmukh said in a press conference that "NDZ does not mean never development zone" and that dereservation can be done "in larger public interest".

The state government seems hell-bent on further congesting Mumbai, with global expertise. *Vision Mumbai: Transforming Mumbai into a world class city* was jointly prepared by international consultant McKinsey and Co and elite NGO Bombay First (it was presented in 2003; subsequently, the chief minister set a task force to look into it) is a blueprint for Mumbai's overall development over the next 10 years. For this "Mumbai must invest US \$40 billion": "Several cities (Cleveland, Shanghai) have been eminently successful... and if Mumbai were to follow...[in terms of investment worth billions of dollars] it, too, will be well on its way." At an *International Conference on Urban Renewal: Learning for Mumbai* — held May 24-26, 2005; finance minister P. Chidambaram inaugurated it — a bureaucrat proposed Rs. 35,000 crore worth infrastructure projects, perhaps taking cue from the report. A part of money for the makeover Vision Mumbai envisages, hopes the state government, will come from the recently announced National Urban Renewal Mission, which has a budgetary allocation of Rs. 6,500 crore for 2005-2006.

What do experts think? "We cannot allow further congestion of Mumbai by all these swanky infrastructure projects. This is highly unsustainable," says R N Sharma, Unit for Urban Studies, Tata Institute of Social Studies (TISS), Mumbai.



Death's record: 26/7 killed, officially, 450 people; at this cemetery, just athwart Santa Cruz airport, records of deaths since 1960 are still drying up

Development 'tools'

Mumbai is already built to bust. But government claims it has development 'tools' that also 'uplift' the poor. The most famous 'tools' are: floor space index (FSI), transfer of development right (TDR) and additional development right (ADR). All three are very builder-friendly. Another 'tool' is reclamation — reclaim the sea, reclaim riverbeds or build on land that gets exposed during low tide.

FSI is the ratio between the built-up area allowed and plot area available. So if FSI is 1, then on a plot of 100 square metres (sq m), one can build 100 sq m of built-up area; with setbacks and open spaces, the building can be higher than one floor. Simply put, the higher the FSI, the more the floors. In Mumbai, the City has an FSI of 1.33, near suburbs have an FSI of 1 and distant ones, 0.7.

Related to FSI are TDR and ADR. TDR is the right to transfer development of a plot to another one. For instance, if a plot owner for some reason is not allowed to use up the entire FSI of 1.33 in the City, s/he can use the remaining FSI on another plot, or sell it in the open market. ADRs are issued to rehabilitate slums, or re-develop old buildings such that the profit generated will be used to re-develop/rehabilitate slums.

Built up		
Building upon the natural drainage system		
Basin flowing into	Area (sq km)	Built up area (percent)
Vasai creek	8.96	43
Vasai creek	27.2	10
Manori creek	37.44	18
Malad creek	16.56	49
Malad creek	24.21	50
Mahim creek	42.07	54

Source: H P Samant, senior lecturer, department of geology, St Xavier's College, Mumbai

Builder 'tools'

Krishnan claims FSI is a money-making tool; it has no relation to planning. During elections, Mumbai is showered with a lot of increase in FSI and dereservation of open plots, he adds. Otherwise, too, government often increases FSI at the drop of a hat. When it comes to re-developing old buildings, reconstructing chawls or housing the poor, increase in FSI is a favourite tool. In this way, huge land-use changes are taking place in Mumbai without people knowing about it. Even dereservation of open spaces isn't publicly debated. "Near my house in Parsee Colony, Dadar, land was reserved for a secondary school and a playground, but to my utter surprise sky-scrappers are coming up there. Another such vacant plot in Bandra Reclamation area was reserved as an open space for residents, but without people's knowledge it was transferred to Sports Authority of India. Local people have gone to the Bombay High Court to protect their open space," says Krishnan.

Samant claims that the 1991 coastal regulation zone (CRZ) law, too, is being twisted by politicians and builders. "Mumbai falls under the CRZ II zone, which is measured 500 m towards the land from the high tide line. The aim of this zone is restricting construction activities to control further densification. This zone also has a special provision for a buffer zone wherever there is seawater intrusion through creeks or natural

channels of the creeks. On both sides of such natural channels, a buffer zone measured from the high tide line has to be maintained. In this zone, FSI is also restricted. But politicians and builders merrily calculate buffer zone from the low tide line or from wherever it suits them. The only hope for Mumbai is to implement the CRZ law," says Samant.

Till recently, Samant was a member of the Maharashtra State Coastal Zone Management Authority. He acknowledges that, till date, not even a single person has been booked under CRZ law, though violations are aplenty.

Milling for land

The central part of Mumbai is dotted with the remains of over 50 textile mills, about 2.4 million sq m (243 ha) of land that, experts claim, can be used in a planned way for Mumbai. But the state government has ensured that while politicians, mill owners and builders amass wealth, Mumbai chokes on.

In the state government's *Development Control Regulations (DCR) for Greater Bombay, 1991*, there existed DCR-58. By this rule, owners of sick mills had to surrender one third of the mill land to the MCGM for public amenities. An equal portion had to be given to the housing authority for social housing. The mill owner could develop the remaining one third or sell available FSI in open market. But in 2001, Deshmukh surreptitiously amended the DCR-58 in favour of mill owners. They could keep the present built up mill area (almost 80 per cent of total mill land) and share only the non-built area with the city.

Post-2000 saw major construction activity in the mill lands. Huge shopping malls came up right in the heart of the city. In the course of a public interest litigation filed in this regard, the city realised what the chief minister had done. Mumbai lost out on more than 140 ha of land — its share as open spaces and public housing. As per the latest

Ignored

Two studies warned: Mithi was a disaster waiting to strike

1996: National Environmental Engineering Research Institute study

■ Mahim bay at present receives around 146 million cubic metres (cum) of untreated sewage per annum ... through Mithi river... Bandra-Kurla Complex (BKC)... would generate over 10 million cum of sewage per annum, which would further add to the critical pollution levels

■ Dissolved oxygen levels are in the range of 1-3 mg/l during high tide which reduces to zero, creating stinking anaerobic conditions, during low tide

■ No environmental appraisal has yet been carried out by the MMRDA, nor sought by the Government of Maharashtra/ Ministry of Environment and Forests

■ The mangroves at the proposed site of Block G were destroyed during 1994-96

■ MMRDA ... has put the region's ecological wealth towards the path of irreversible ecological damage

■ The reclamation of wetlands and mangrove swamps in Mithi river estuary would increase flooding potential in the region, which is already a recurrent annual phenomenon on the Mumbai coast line

■ The site for International Finance and Business Centre (BKC Block G) and parts of other blocks are within the intertidal zone, which is in violation of the Coastal Zone Regulations

2004: Findings of Maharashtra Pollution Control Board

■ Pollution levels have reached an alarming stage

■ [Some] samples... had very low or nil dissolved oxygen probably due to high organic load contributed by sewage or decomposed garbage

■ Oil & grease levels were very high (more than 10 mg/l) at most locations starting from Powai lake overflow to Mahim creek

■ Dissolved oxygen ranges between nil and 2.5 mg/l

■ Total dissolved solids range between 943 to 35,252 mg/l

■ Chlorides range from 372 to 21,238 mg/L

■ Chemical oxygen demand 92 to 358 mg/L

Final plan:

Engineers Hammer Out A Solution To Keep Seawater Out During High Tide, Plan Pumping Station, More Culverts, Concrete Gradients

Clara Lewis | TNN

Mumbai: A year and a half after 26/7, following several rounds of discussions between engineers, environmentalists and planners, a final solution has been knocked into place to control the flow of water downstream where the Mithi river joins the sea at Mahim.

This is the second phase of the River Development Plan and involves widening its course round the bend where the Mithi flows past the Bandra-Kurla Complex and pours out into the

structed on either side of the bridge to further ease the flow of water.

A pumping station too will be built to push water out into the sea during high tide when the sluice gates are shut. The gates will prevent sea water from flowing back into the river and the pumps will take care of preventing the river from overflowing its banks.

The deluge in 2005, which left hundreds dead in Mumbai, had woken up the administration to the need to clear out the Mithi's banks and dredge out the silt which obstructed its flow. As a natural drain for rainwater collecting in the suburbs, the river needs an unimpeded course to spew floodwaters into the sea.

The consensus for the final Mithi plan was reached after municipal chief Johny Joseph called a meeting last week at the BMC headquarters, which was attended by officials from Central Water and Power Research Station (CWPRS) and Mumbai Metropolitan Region Development Authority (MMRDA).

A technical committee comprising ex-PWD secretary N V Merani, IIT professor Kapil Gupta, IIT, and CWPRS director S Bendre will oversee technical aspects throughout the implementation of the project. The biggest challenge will be to ensure that the existing services which include railway lines, the water mains, the Causeway and the Bandra flyover are not disturbed by ongoing civil work.

"The real result of all the engineering work will be visible after a year and a half. The immediate results will be desilting and widening of the river in the Bandra-Kurla complex area around the old airport culvert," said Joseph.

The consensus for the final Mithi plan was reached after municipal chief Johny Joseph called a meeting last week, which was attended by officials of other agencies as well

Arabian Sea. TOI was provided exclusive access to the broad contours of a plan, which involves setting up sluice gates at Mahim Causeway and building concrete gradients on the river bed.

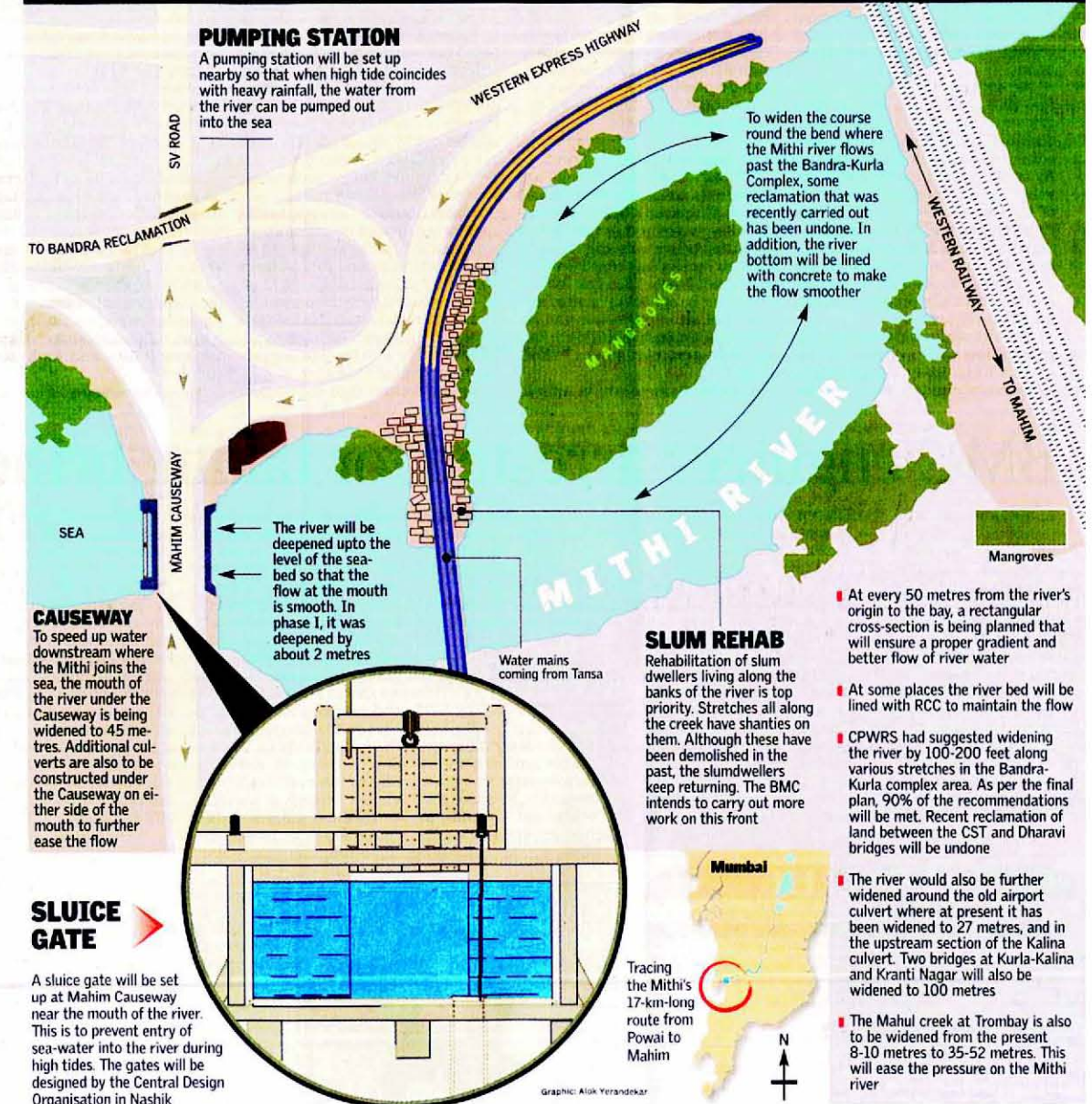
Although the initial recommendation was to widen the river by upto 100 feet downstream, planners have now reconciled to the view that they will have to settle for much less, given the dense development that has taken place along the river's banks.

To make up, the river will be deepened to the level of the seabed and all obstructions cleared to ensure a smooth flow in case of heavy rain. At Mahim Causeway, the mouth has been widened to 45 metres and additional culverts are to be con-

Source: The Times of India

Sluice gate at Mithi mouth

ROUND THE BEND, INTO THE SEA: PLAN IN PLACE TO TAME A RIVER

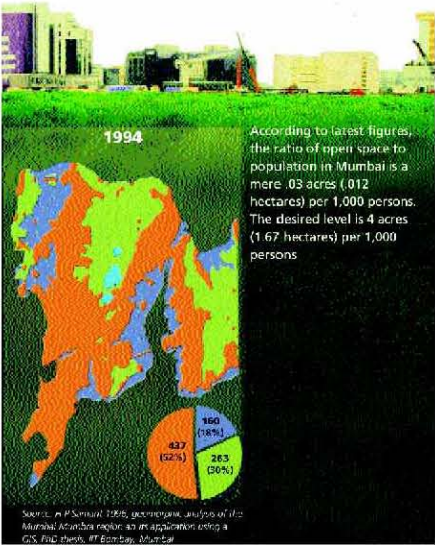
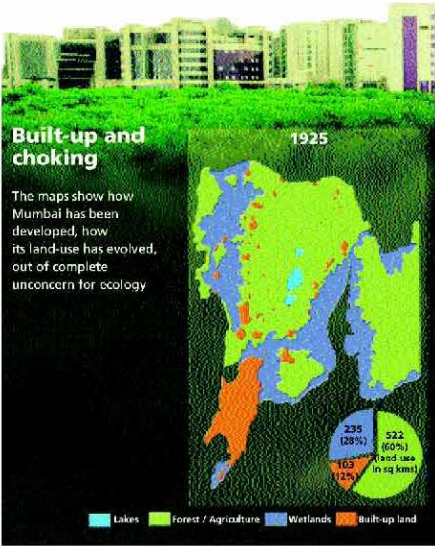


calculations, Mumbai will hardly get 8 per cent of the mill land for open spaces. The rest goes to mill owners, selling mill land like hot potatoes. Is it a coincidence that politicians like Manohar Joshi and Raj Thackeray paid a premium price of Rs 421 crore to bid for Kohinoor Mills?

Further, it has recently come to the notice of the Bombay High Court, which is hearing the matter, that many mills had started construction work without taking necessary permission from the pollution control board. As per the court's directions, the Maharashtra Pollution Control Board has recently issued stay orders to mills carrying out illegal construction. But the issue is far from resolved. Mumbai seems to have lost a golden opportunity to create its lungs in the form of open spaces from the freed mill lands. How can it live? That is a question only politicians can answer.

The government said: high tide water, acting like a wall. Rubbish. The tide, on July 26, was at its highest at 15:50 hours, just four and a half hours after it had started raining; in the next three days, it did not peak much (see table: Tidal lie). So what went wrong? On July 27, at a press conference, Vilasrao Deshmukh thundered: "Too much rain, drainage not at fault". But Mumbai's stormwater drainage network (SWDN) is over 70 years old. "The British constructed it to handle run-off capacity of 25 millimetre (mm) per hour at low tide, just by rule of thumb. It is now 2005. Mumbai's population has exploded and the built-up area has increased rapidly. Also, the monsoon pattern has changed. But the drainage system has only crumbled," laments Kapil Gupta, professor at Indian Institute of Technology Bombay, Mumbai.

According to the Municipal Corporation of Greater Mumbai (MCGM), Mumbai's 'official' SWDN consists of road drains, minor nullahs, major nullahs and outfall. All are interlinked, and finally empty into either the Arabian Sea directly or into the four creeks that open into the Arabian Sea.



Tidal lie

Highest and lowest tides, July 26-29, 2005

Date	Time (hours)	Height of tide (metre)
July 26, 2005	1550	4.48
	2213	0.90
July 27, 2005	1631	4.14
	2258	1.06
July 28, 2005	1710	3.76
	2351	1.24
July 29, 2005	0644	3.43
	1214	2.40

Source: Mumbai Coastal Bandwidth India, West Coast

The City is extremely privileged. It has 115 SWD outfalls. In contrast, the Western suburb has 43 and the Eastern suburb a paltry 28 — the Mithi river carries most of the discharge from these. Also, the City system is mostly underground; the suburbs have open drains and nullahs. "Suburbs are developing so rapidly that the municipality is not able to provide proper drainage. Also, low-lying areas and old ponds have been filled to make multi-storey buildings and shopping malls. So the natural drainage system, of holding ponds and water channels, no longer exists. Flooding is but natural," says R N Sharma, head of unit for urban studies, Tata Institute of Social Sciences (TISS), Mumbai.

The suburban outfalls depend on gravity to discharge rain water: flood gates — which close when the tide reaches 4.6 m high, or in heavy rainfall, to avoid a seawater backflow — are located only at Love Grove, Worli; Cleveland Bunder, Worli; and Haji Ali. This is why most low lying suburban areas experience annual floods. Moreover, "At many places seawater has intruded into the city through stormwater drains and corroded pipelines. Sometimes it even shakes multi-storey buildings," says Girish Raut, a Mumbai-based activist.

All wrong: drainage

Mumbai's drainage problem is completely an effect of construction and reclamation-mania. Explains Gupta: "The quantity of water falling on the city has not decreased, but the space to flow

has, tremendously. Earlier, almost 50 per cent water would seep into the ground, drastically reducing the total volume to be managed. But today the whole city is cemented. Hence, whenever water falls, the ground cannot absorb it. Most nullahs and drains are encroached upon and choked. They, too, cannot tackle so much water."

There is no local practice of stormwater management. At present, every municipality in India must follow the 1993 Manual on Sewerage and Sewage Treatment of the Central Public Health and Environmental Engineering Organisation (CPHEEO) under the Union ministry of urban development. "The CPHEEO manual prescribes a single capacity — of 12 mm to 20 mm per hour flow — for SWDN throughout India, be it Jaisalmer or Mumbai. This is ridiculous. It needs to be updated," says Gupta.

Any SWDN in any Indian city is today constructed keeping in mind peak per hour flow. Gupta believes this doesn't make sense. All calculations, he says, need to be made on the basis of 15 minutes peak flow, for in any Indian city, on average, it takes about 15 minutes for water to flow — from where it falls — to the nearest drain.

Any ideas?

MCGM conducted an elaborate study of Mumbai's drainage system in 1992. The Brihanmumbai Storm Water Drains (BRIMSTOWAD) report recommended the following: divert dry weather flow to sewage pumping station; provide storm water pumping stations; increase drain capacity; improve flood-gates; repair dilapidated drains; augment railway culverts; and deepen/widen nullahs. At that time the cost of the project, to be implemented over 12 years, was Rs. 616 crore. This has now escalated to Rs. 1,200 crore. Some work was started. Then everything stopped, due to lack of funds. Surprising: MCGM is one of the richest municipalities in the country, with an annual budget of about Rs. 7,500 crore. Post-July 26, the state government has forwarded

BRIMSTOWAD to the Centre, which now seems in a mood to fund the project. If implemented, the capacity of Mumbai's SWDN will increase from 25 mm per hour to 50 mm per hour. Will that solve the problem? "No. The situation has changed since 1992, when BRIMSTOWAD was prepared. 50 mm per hour is still under-capacity. What Mumbai needs is minimum 100 mm per hour capacity drains," suggests Gupta.

What about natural drainage?

The most ignored system in Mumbai is its natural drainage, its rivers and rivulets. Of these, river Mithi is the most important, drainage-and ecology-wise. Others have almost disappeared; the Mithi still flows as a stinking choked nullah.

The river originates in the Sanjay Gandhi National Park — thus, it is rain-fed. It flows to the Tulsi lake, and thence to Vihar and Powai lakes. From Powai lake starts an approximately 15 km journey that ends in the Arabian Sea at Mahim creek: in other words, all of north Mumbai forms the Mithi's catchment.

Now consider official awareness. Some plans

prepared by the Mumbai Metropolitan Region Development Authority (MMRDA), Mumbai's chief planning body, do not even show the river. Reads the MCGM's Environmental Status Report of Mumbai 2002-03: "One of the heavily polluted storm water drains, known as Mithi River, is responsible for polluting Mahim Creek (emphasis added)."

Big fish play with it

Post July 26, the government is talking of removing slums, for — it claims — these have polluted the river. But slums are minnows. The big fish is the Bandra-Kurla Complex (BKC), government's own creation. BKC has been built mostly on reclaimed Mithi wetland and by destroying mangrove jungle.

Various reports had warned against reclaiming the wetland (see box: Ignored). In 1993, the mangrove committee of the state government said reclamation would obstruct Mithi. In 1996, the National Environmental Engineering Research Institute (NEERI) exposed MMRDA'S malfunctioning. Next year, the Bombay Natural History Society did a study for the Union ministry of environment and forests (MoEF), in which it recommended in-situ protection of Mahim mangroves. Still, the BKC project went on. In 2003 and 2004, architect P K Das and the Maharashtra Pollution Control Board prepared action reports on Mithi's revival, to no avail. The only study supporting BKC's construction was one completed in 1996 by Pune-based, government-owned Central Water and Power Research Station (CWPRS), which NEERI alleges is a "limited study". Experts contend that data as old as 1938 and 1954 was used to justify reclamation. BKC is criminal engineering (see map). "G block of BKC has directly suppressed Mithi, changed its course of flow and ensured that no mangrove survive there. Bund construction has blocked tidal water flow," says Raut.

Other fish, too

Air India colony in Kalina and the Santa Cruz airport, that got badly inundated on July 26, are also built right on Mithi wetland, which once stretched from Kalina till Mahim Creek. But this has been reclaimed for construction. For instance, Airport Authority of India (AAI) reclaimed land to construct a runway and changed the river's direction by constructing a wall — the river now runs in two right angles while passing near the airport! On July 26, the swollen river breached the wall. "Our houses, and death records post-1961, all got washed away," says Shanta Ram, who performs last rights of dead bodies in a Hindu cemetery right behind the Santa Cruz airport. "Without any doubt I can say it is this wall that has changed the course of Mithi and narrowed its path. And we all have paid a price for messing with the river."

The state government claims it will remedy the Mithi's pollution and other problems. A Mithi River Development and Protection Authority, headed by the chief minister, has been set up. It will suggest corrective measures. Interestingly, none other than the MMRDA, the river's worst tinkerer, has to prepare a draft proposal to set up of this authority and also conduct a survey of the river. And CWPRS — which supported construction of both BKC and Bandra-Worli Sea Link — has to recommend remedial measures within the next two months. Good luck, Mithi river.

BRIMSTOWAD ■ Centre approves 100 per cent grant; first instalment of Rs 400 cr expected in a fortnight

EXPRESS NEWS SERVICE
JULY 12

FOR Mumbaiites weary of the annual drudgery of floods and consequent shutdowns, hope came on Thursday when the Union Cabinet Committee on Economic Affairs gave its formal—and final—nod to the Rs 1,200-crore Brihanmumbai Storm Water Drains Project (BRIMSTOWAD). The first instalment of Rs 400 crore is expected in the next fortnight, said civic officials.

While the 13-year-old project, considered the bare minimum required to solve the city's annual flooding problem, was first submitted to the Union government under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) for a 35 per cent grant, the Centre has cleared a special grant of 100 per cent of the project cost, delinked from JNNURM.

Municipal Commissioner Jayraj Phatak called it "happy news". "Once the project is implemented, the city will not flood if it rains up to 450 mm a day, even during high tide," he said, adding, "But if it rains up to 1,000 mm in a day, it can be only called a natural calamity."

While the present drainage system is capable of handling up to 25 mm of rain per hour, BRIMSTOWAD specifications allow drainage of up to 50 mm an hour.

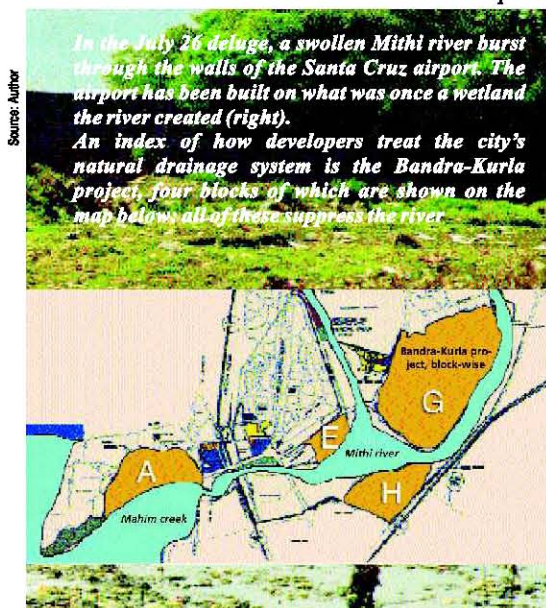
The CCEA has okayed the project on certain terms and conditions: cost escalations, if any, are to be borne by the state; cost of operations,

maintenance and rehabilitation of displaced persons is also to be borne by the state; a joint monitoring mechanism, including central and state representatives, will ensure its timely completion.

The BMC has estimated that Rs 600 crore will be required for rehabilitating project-affected people and slumdwellers who will have to be moved from their shanties encroaching nullahs and drains. Phatak said this money could be drawn from the Basic Services for the Urban Poor scheme (BSUP). "Most of the money sanctioned for housing under BSUP is not used as housing projects are implemented through various Slum Rehabilitation Authority schemes," he said. Additional Municipal Commissioner Shrikant Singh said there are an estimated 20,000 shanties to be rehabilitated.

In Phase I entails 19 capital works for widening, deepening and training of nullahs, rehabilitation of arch/box drains and construction of four pumping stations (Haji Ali, Lovegrove, Cleveland Bunder and Irla). Singh said tenders for pumping stations have been called, environment clearance has been received from the Centre and work will begin on October 1.

Phase II includes construction of four additional pumping stations, at Britannia Outfall at Reay Road, Mahul Creek, Gazdar Bandh and at Mogra Nullah at Andheri. These are expected to be completed by 2011.



Source: Author