

Following other officials of M.P.C.B. were present for the meeting:

- 1) Mr. K.B. Shinde, S.R.O.
- 2) Mr. A.F. Deshmane, S.R.O.

Shri A.B. Jain, Shri Kishor Dhariya and Shri Hemant Rane communicated their inability to attend the meeting due to pre-occupations.

At the outset Shri D.M. Choukhande, Regional Officer-Navi Mumbai welcomed the members and briefed about the background, objectives and scope of the Committee.

The members had due deliberations on the subject with reference to the points raised by Shri Gajanan Kirtikar and available information with the Maharashtra Pollution Control Board Office. After the discussion, following decisions were made:

1. The Regional Officer-Navi Mumbai shall follow up with the CIDCO and NMMC authorities for required information and maps of Airoli Sectors-14,15 and 17 with respect to following points(Map No. 3).:
 - The layout map of Airoli node showing creek area and boundaries of Sectors-14, 15 and 17.
 - Map showing Location of holding pond and STP.
 - Map of the creek adjoining Airoli showing LTL, HTL and mangrove areas.
 - Map showing ownership details of the area of holding pond.
2. The Regional Officer, Maharashtra Pollution Control Board shall also write to Commissioner, NMMC for providing information and data on the above points. Also the status of ownership of holding ponds and the action taken if any, by NMMC authorities with respect of their letter dated 19/6/2004 shall be called which includes information regarding NMMC's action regarding beautification of area around holding pond, prohibition of dumping of debris and municipal solid waste in and around holding ponds and protection and conservation of mangroves in the area.
3. The members desired to physically inspect the area before the next meeting and during the visit; necessary audio visual information in the form of photographs and videos should be collected. The next meeting is as proposed on 15th April 2005 at suitable location in Navi Mumbai:
4. It was also decided to simultaneously start preparation of draft for beautification and conservation of mangroves along the creek side. It was suggested that experts from BNHS, Mumbai, Forests Department, Local NGOs, representatives of CIDCO and NMMC be invited for the subsequent meetings of the Committee:
5. The Committee may consider involving local public and formation of Advanced Locality Management Units in the area for effective implementation of recommendations.

Following Members were present:

- 1) Dr. S.B. Chaphekar
- 2) Dr. A.R. Supate
- 3) Mr. D.M. Choukhande
- 4) Mr. S.S. Doke
- 5) Mr. A.B. Jain

Other MPCB Officers who were present for the meeting:

- 1) Mr. P.M. Joshi, Sub-Regional Officer
- 2) Mr. K.B. Shinde, Sub-Regional Officer
- 3) Mr. A.F. Deshmane, Sub-Regional Officer

1. The Members of Committee visited Airoli site on 15/4/2005 with Holding Pond as the Centre of the Project in question. Frontage of Sectors 13, 15, 17 & 18 (STP) were covered during the visit. Following observations were made by the Committee during the visit.
2. It was time of low tide (1000 hrs to 1230 hrs). There was no water on ground below the mangroves. Vast area of the holding pond was exposed as soft mud, with a narrow stream of water visible, moving in the central portion of the mud flat.
3. Almost all the sides of the pond were covered with rubble, construction refuse and domestic solid waste. Border of the pond opposite Sector 17 was evidently used by some people for defecation.
4. Mangroves in many places have been harvested (for fuel). This is so especially opposite Sectors 13 and 17. Some fringe area opposite Sectors 15, 17 and 18 seemed to have been reclaimed for development of Park, the effort that appears to have been abandoned mid-way. Instead, the abandoned area seemed to be used for dumping of solid waste.
5. Slope of the pond border opposite Sector 17 had 2 – 3 rows of planted trees, forming 'green belt'. One more row along the pond appeared to be ready for plantation; a row of pits was visible parallel to the earlier rows. Most of the trees were heavily infected by insects (the trunks and branches covered with nesting of 'white ants' or similar insects).
6. One aerator (out of 4 installed) of the STP was in operation. Odorous water was flowing directly into the channel that passed through mangroves. The lagoon was reportedly not in use at present.
7. Small-time fishing appeared to be in progress in places, where earthen-bunds have been erected to store creek water into small ponds. Small huts were present on the bunds, mostly to function as shelters for fishermen. The bunds have obstructed free flow of water in mangrove areas. It is reported that the fishing activity is illegal and encroachment by fishermen unauthorized.

8. Mangroves along the holding pond were stunted in nature, hardly 2-3 meters in height. Those in the interior i.e. towards the creek, some 25 meters northward and beyond the hospital showed better growth, reaching 5-6 meters in height. Mangrove vegetation around holding pond provided shelter for a variety of birds. It was decided that the Committee would visit the site again at high tide. Mangrove species observed at the site are depicted in Table 1 below.

Table. 1.: Mangrove species along Thane Creek near Airoli, Navi Mumbai

No.	Species Name	Status	Family
1	<i>Rhizophora mucronata</i>	Threatened	Rhizophoraceae
2	<i>Avicennia marina</i>	Most common	Verbinaceae
3	<i>Avicennia officinalis</i>	Most common	Verbinaceae
4	<i>Sonneratia apetala</i>	Most common	Sonneratiaceae
5	<i>Acanthus licifolius</i>	Most common	Acanthaceae
6	<i>Aegiceras corniculata</i>	Common	Myrsinaceae
7	<i>Salvadora persica</i>	Common	Salvadoraceae
8	<i>Excoecaria agallocha</i>	Common	Euphorbiaceae
9	<i>Clerodendrum inerme</i>	Common	Verbinaceae
10	<i>Sesuvium portulacastrum</i>	Common	Chenopodiaceae



Fig. 1. A lone *Rhizophora mucronata* thicket in a fishing pond where other mangroves have been harvested to create the pond

CZMP of the area will also be provided to the Committee. (2) Map showing HTL in that area was provided.

2. Mr Khan, Executive Engineer from NMMC informed that the two aerators which were not in operation during the visit of the Committee will start functioning from Wednesday i.e. 18th of May, 2005 and others will be re-installed as early as possible. Mr Patnigire, Dy. Commissioner, informed that the park beautification will be undertaken soon, though he could not specify the time frame. He informed that Rs.75 lakhs were earmarked for this purpose and passing of the budget was awaited. He also informed that, notices have been given to the operators of fish ponds, mainly on the ground of menace of mosquitoes breeding in the area. According to him, all the fishing ponds in the area are unauthorized but their removal may create law and order situation. He requested the Committee to take up the issue with Police Dept for extending required assistance, while carrying out removal of bunds. He assured that removal of debris and proper functioning of STP will be undertaken on priority.
3. As regards protection of mangroves, Mr. Patnigire stated that Rs.25 lakhs have been sanctioned but will be released only after budget approval. He requested the Committee to provide expert advice for re-generation of mangroves. Since he has limitations in controlling poachers, who harvest mangroves for fuel and other purposes, he requested the Committee to provide police protection.
4. He also expressed his inability to control dumping of solid waste and debris in unauthorized area. He stated that areas are marked for solid waste dumping but as of present many people are dumping debris as well as domestic refuse along the holding pond and he found it very difficult to prevent such activities without support of citizens. He assured that "No Dumping Allowed" boards will be put up at appropriate places immediately. The Committee suggested formation and encouragement of 'Advanced Locality Management '(ALM) groups of the local citizens. Mr. Patnigire further requested for advice to control immersion of Ganesh Idols in the creek near Airoli Bridge. The Committee requested Mr Patnigire to provide information on approximate amount of clay resulting from these immersions.
5. Mr. Jain explained the problem of the site which was used by the contractors of Airoli bridge for fabrication of bridge material on the edge of the creek and also the jetty which was constructed at the same time. He stated that the contractors as well as CIDCO should have removed the sheds/construction material and make efforts for regeneration of mangroves and restoration of coastal ecosystem. He suggested that for ascertaining the CRZ category, the relevant CZMP maps will have to be seen.

4.5 Minutes of the meeting held on 30/5/05:

Draft of the final report was discussed. Members made some suggestions for inclusion and/or deletions in the draft. Suitable photographs were included in the Report for clarifying certain points further. The final draft was then approved unanimously; there were no dissensions.

The Committee members decided to meet on 9th May, 2005 at the same site for the following:

- 1) To coincide with high tide which will help to confirm the pattern of tidal water movement, especially to answer the questions like:
 - Is the movement of tidal water in the holding pond free enough?
 - What is the level of normal (non-rainy season) high tide along the perimeter of the holding pond?
 - Is the STP effluent stopped in its flow into the creek as claimed, during high tides?
 - To what extent the bunds erected by fishermen prevent movement of tidal water?
- 2) To have dialogue with the fishermen, so as to establish some quantitative aspects of their fishing activity, viz.
 - How many families are involved in fishing activity?
 - Are they totally dependent on this resource for their survival?
 - Or, is this their part-time/leisure activity?
 - Or, do they derive their supplementary nutrition from their catch?
 - How much catch is consumed within family and how much is marketed, say, every month?
- 3) A dialogue with the authorities is necessary to establish the onus of planned action in the area in future. One has to know for certain:
 - Who is responsible for protecting the mangroves from encroachment in the area?
 - What are the roles of Forest Department, Revenue Department, Navi Mumbai Municipal Corporation and CIDCO with reference to the mangroves, the holding pond, the proposed (but apparently abandoned) park project and the villagers? Also it was suggested having a meeting with Relevant Officials of NMMC, CIDCO, Revenue & Forest Departments to seek information cited above.

4.5 Minutes of the site meeting of the Committee on 9/5/05 at Airoli site:

Further observations were carried out, with particular attention to tidal water reach, as decided during the last site visit, which was at low tide time.

High tide was good. The Holding Pond was full of tidal water and most of the mangroves had their lower parts submerged in water. This is a good sign.

1. Sewage Treatment Plant:

None of the aerators was functioning. One had been removed, two others were in precarious conditions, tilted and one-side-in-water position and the fourth one was reportedly under servicing! As a result of non-functioning of any of the aerators, the sewage water being pumped into the aerator lagoon, was totally untreated. This untreated water was flowing directly into the creek branch. No sewage water was flowing into oxidation pond either.



Fig. 2. Poorly maintained STP at Airoli

Abundant growth of blue-greens on the margins of the aerator lagoon and on the objects like the unused aerator, rope, etc., as also bubbles emerging from the bottom of the lagoon indicated high level eutrophication of water in the lagoon. After reaching the creek branch, the waste water was moving with tidal water. Almost 50 meter stretch of the creek stream, stretching on either side of the confluence with sewage water, was dirty gray in color and highly odorous, indicating that the sewage water had little change to drain into the Thane creek.

Apart from non-functioning of the aerators, the oxidation ponds were also not in use. Water was let off into the creek irrespective of tidal situation.

2. Fishing activity:

A big pond has been created by cutting mangrove trees and excavating soil from the resulting flat land. The excavated soil is used for construction of bunds for storage of creek water. This has resulted into diversion of creek water, which during high tide, has to skirt around the bunds. Some of the tidal water pours into the artificial pond which remains stored during low tide. This water is reportedly used for fishing. The system of such ponds is well planned, using locally available, cheap resources and abundant cheap labor. In one place opposite the hospital, a chain of three such ponds is created, with water moving from one to another pond through sluice gates made up of wooden planks. Some 60-odd such fishing ponds are present in the area, as reported by a local resident. He, as well as others in the locality, complained about severe mosquito menace in the region.