

<p><b>UNITED NATIONS</b></p> <p><b>OFFICE FOR THE COORDINATION OF HUMANITARIAN AFFAIRS</b></p> <p><b>Occupied Palestinian Territory</b></p>		<p><b>الأمم المتحدة</b></p> <p><b>مكتب تنسيق الشؤون الإنسانية الأراضي الفالسطينية المحتلة</b></p>
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## **Environmental emergency: Beit Lahia Waste Water Treatment Plant 28 January 2004**

### **Summary**

- The Beit Lahia waste-water treatment plant in the northern Gaza strip was originally designed to serve up to 50,000 habitants. The total population of the area served by the plant is now around 190,000, and the plant has reached maximum capacity. 110 acres have already been flooded by waste from the plant, and this area is growing.
- The effluent lake that has developed near the plant has created a serious health and environmental hazard. The area provides a natural breeding ground for mosquitoes and parasites, and the environment is also conducive to the transmission of water-borne diseases. 50 per cent of children in the adjacent village have already developed problems with their digestive systems. Health professionals are also concerned about the effects of the high level of nitrates on the health of local populations.
- Unless action is taken to address this problem, water in this effluent lake will spill out over the holding basins into residential areas, and directly into homes.
- Two steps should be taken to address this urgent problem:
  1. The construction of a new filtration basin at the existing sewage treatment plant: this would help to reduce the volume of the effluent lake, and prevent further flooding.
  2. In the long run, a new treatment plant should be constructed in north eastern Gaza to increase capacity.
- In November 2003, an international donor withdrew support from an earlier agreement to fund a new treatment plant through a concessional credit. The donor was concerned by continuing political uncertainty, and by anticipated delays in project implementation. The donor also feared that international technical consultants might not gain access into Gaza.
- No new donor has been found to finance the plant, although COGAT confirmed approval for plant construction in early November. The Palestinian Water Authority (PWA) estimates that the new plant and associated capital equipment will cost €36million.

- Great concern exists at continuing inaction on this issue. A workshop was convened in Gaza on 29 December 2003, at which the PWA, northern Gaza Municipalities and local residents called for immediate action and urged the Palestinian Authority to seek as a priority funding for the new treatment plant. The PWA was asked at the workshop to start the construction of an additional filtration basin. Work on this interim measure has not, however, proceeded to date.

## **Background**

The Beit Lahia waste-water treatment plant is located in the northern part of the Gaza Strip, around 1.5 km east of the town of Beit Lahia. The plant serves the town and camp of Jabballia, part of Beit Lahia and the nearby town of Beit Hanoun. A predominantly Bedouin community, Um An Nasir village, is also situated directly adjacent to the treatment plant.

Construction of the plant began in 1976, and the plant was expanded in 1991 to increase its peak flow capacity to 5,000m<sup>3</sup> per day. UNEP estimates that at present, about 12,000m<sup>3</sup> of waste water passes through the plant each day.

The original design of the treatment plant included four effluent basins, which have since expanded to a total of seven. Despite this expansion, the daily amount of sewage substantially exceeds the plant's capacity. The combination of an ever increasing volume of waste and insufficient capacity has led to effluence overflowing from the basins into the surrounding sand dunes, creating a lake which now covers over 110 acres. In 1995 the affected area was 13 acres.

The water level in this effluent lake is now almost equal to the levels in the basins: the PWA estimates only a 20cm shortfall. Once both water sites reach a balance, the sewage will spill out over the basins into residential areas, and directly into homes.

Without a concerted response to the persistent rise in volume of effluence, such flooding is regarded as inevitable. The PWA is currently raising the height of the sand barriers around the lake to try to prevent such flooding, but this is only a short term solution.

## **Consequences for the health of local populations**

The flooded area around the treatment plant provides a natural breeding ground for mosquitoes and parasites. This environment is also conducive to the transmission of water-borne diseases. A large and growing number of children are already showing signs of digestive and respiratory health problems.

The worst affected population is the Bedouin community at Um An Nasir. The village is situated at the very edge of the treatment plant and its overflow. The village clinic identifies three principal health problems:

- Over 50% of children have problems with their digestive system; these problems are a consequence of the parasites and helminthes from the plant. Symptoms include bloody diarrhea, abdominal pain, constipation and appetite loss.
- The population is also suffering from skin infections and allergies caused by the high prevalence of mosquitoes leading to ulcers, itching and rashes.
- Respiratory diseases are also widespread. These are caused by gases from the sewage basins and the high levels of humidity in the summer.

Health professionals are seriously concerned about the long-term affects of this hazardous environment, and in particular the high level of nitrates in the groundwater. These could lead to stunted growth, mental disorders and cancer. The continuous fear of flooding into the local communities may also cause stress and psychological damage.

## Solutions

The PWA and the Environmental Quality Authority (EQA) propose two solutions, on the basis of recent technical assessments.

- i) Short-term. Construction of an additional basin that would reduce the volume in the lake;
- ii) Long-term. Construction of a new treatment plant in north eastern Gaza.

The construction of a new sewage treatment plant is needed to to prevent further damage to the environment and to people's health in the long run. The design for the new plant has been completed and a potential location identified. The PWA and EQA have undertaken an environmental impact assessment, and tender documents are close to completion.

COGAT has stated in writing that it regards the construction of the waste water treatment plant "with the utmost importance, and would gladly render any necessary assistance for its promotion".

The Palestinian Authority does not have sufficient funds for such an investment, and is unlikely to raise the money itself. External donor support is the only means by which the current critical situation can be resolved.

UN Office for the Coordination of Humanitarian Affairs (OCHA)  
**NORTH GAZA - BEIT LAHIYA**  
**SEWAGE TREATMENT PLANT LOCATIONS**  
 January 2004

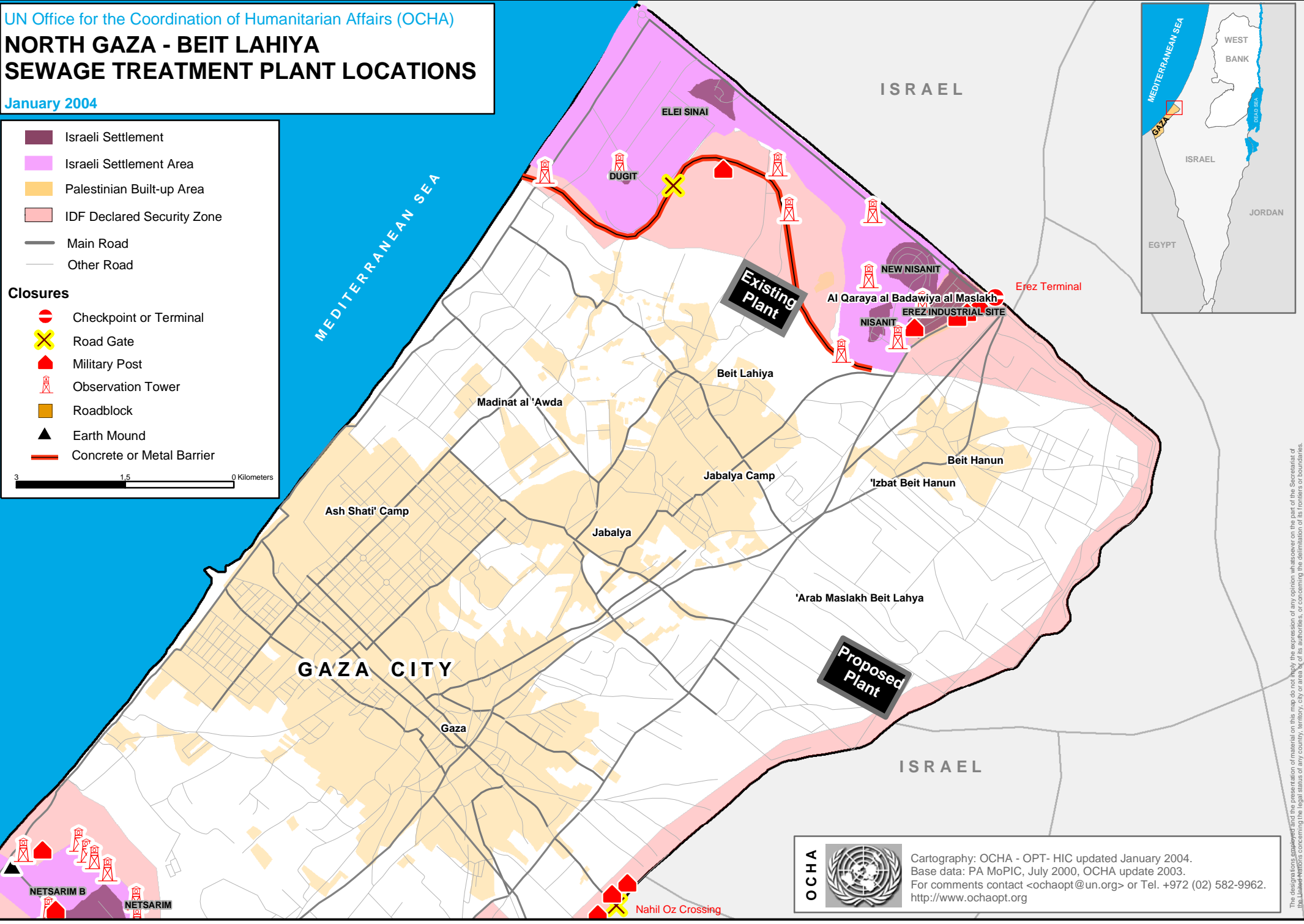
**Legend**

- Israeli Settlement
- Israeli Settlement Area
- Palestinian Built-up Area
- IDF Declared Security Zone
- Main Road
- Other Road

**Closures**

- Checkpoint or Terminal
- Road Gate
- Military Post
- Observation Tower
- Roadblock
- Earth Mound
- Concrete or Metal Barrier

0 1.5 3 Kilometers



**OCHA** 

Cartography: OCHA - OPT- HIC updated January 2004.  
 Base data: PA MoPIC, July 2000, OCHA update 2003.  
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