

DRAFT

GAP ANALYSIS

**Delhi Metro: Central Secretariat – Badarpur
Corridor**

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PREFACE

Environmental Impact Assessment (EIA) is critical to obtaining prior environmental clearance before initiating any new Project or activity, or for the expansion or modernisation of existing projects or activities.

However, according to a news story in the Down to Earth magazine¹, Delhi Metro has got an EIA waiver and it does not require any prior clearance when it comes to constructing the Metro in the city.

If this is the case, then the EIA reports available on the Delhi Metro's website are prepared as a gesture of environmental sensitivity and awareness.

However, the reports have some shortcomings that have been pointed out in this Gap Analysis report. A particular EIA report of the **Central Secretariat – Badarpur Corridor** is critically analysed. The gap analysis is prepared in the light of the EIA Notification of 1994, the draft Notification of 2005 and the existing 2006 EIA Notification.

The following gap analysis is based on best environmental practice principles and professional judgement. It is open to articulation and suggestions are invited.

¹ Down to Earth, *What Impact?* May 15, 2006
http://www.downtoearth.org.in/full6.asp?foldername=20060515&filename=news&sec_id=4&sid=15

GAP ANALYSIS

ENVIRONMENT IMPACT ASSESSMENT REPORT OF Central Secretariate² – Badarpur Corridor

http://www.delhimetrorail.com/corporates/ecofriendly/enviorenment_impact_assesment_Central_Secretariate_Badarpur_Corridor-1.pdf

The purpose of the EIA is not stated in the beginning of the report. Instead, the report straight away starts with providing the Environmental Baseline Data. The project and project proponents are not identified and there is no description of the nature, size and location of the project.

The EIA report does not mention the name/contact information of the EIA Agency which has prepared this report. In the event that Delhi Metro prepares its own EIA reports, it becomes necessary that they at least provide the contact information of their EIA Wing. Hopefully, the EIA Wing is registered with the Ministry of Environment & Forests.

Environmental Baseline Data

While establishing the environmental baseline data, an essential component that has been missed is the description of the existing land use on both sides of the road on which the Metro is planned to be constructed. This information will be important to predict impacts and could have been used during the mitigation stage to determine where all the sound barriers (if at all) need to be put on the elevated track.

Water Quality: Even though the said corridor is slated to be constructed from Central Secretariat to all the way to Badarpur, samples for the physico-chemical analysis of groundwater were collected only from around the Jawahar Lal Nehru (JLN) Stadium.

The above is true for **Soil Survey** as well. Also, the type of soil present is not mentioned.

Flora of the Project Area: When indicating the part of the corridor that will be elevated, the report only gives an estimation saying, “The proposed alignment along Central Secretariat – Badarpur corridor will be underground, at grade but **mostly** elevated tracks at the median (i.e. at the central verge). It does not describe or explain how much is this ‘mostly’.

The total number of affected trees from Central Secretariat to Badarpur is counted to be 4401. This is a big number and the loss of such a large number of trees will have a significant impact on the environment of Delhi. It has not been found necessary to investigate and list such impacts. Also, only the number of affected trees has been mentioned. There is no mention of the names/species of the affected trees.

² As spelled in the EIA report

Air Quality: The air quality measurements have been carried out ONLY in the month of June 2006. This is more rapid than most rapid EIAs. At least a six months (if not an year) data should have been collected along the corridor, in order to ensure that a proper air pollution survey was done along the proposed corridor.

The **Noise levels** survey seems adequate though it has taken into account only the quantity and not quality of the sound level.

POSITIVE ENVIRONMENTAL IMPACTS – A CRITIQUE

- The report mentions **‘Reduced fuel consumption from the transport sector resulting in precious foreign exchange’** as a positive environmental impact. However, the increase in the consumption of electricity required for the operation and maintenance of the Metro is not mentioned in the negative environmental impacts list.
- With the increase in the demand of electricity, more of it will have to be supplied and this will require more thermal and/or hydroelectric projects to come up. Both of these cause much damage to the environment even leading to global warming. This may nullify the **‘Reduction in green house gases (GHG) emissions from the road sector’**.
- **‘Reduced traffic resulting in reduced congestion on roads’** has been listed as a positive environmental impact **which may result from the ‘probable’ shifting of significant proportion of two and three wheelers to the Metro**. First, only those who travel from one proposed station to the other at present will shift to the Metro. Second of all, if the above mentioned is probable, then this would mean that the existing *autowallahs* will soon be out of job. This should be included as a Negative Environmental Impact, since social inequity is bound to lead to some environmental damage and the same should also find a mention in the Mitigation Measures/Management Plan.
- **‘Reduced need for expansion of roads, flyovers, laying of new roads, etc.** is mentioned to be a positive environmental impact of the Delhi Metro. However, what need to be realized is that when it comes to mobility - the car is a symbol of ultimate freedom. The Metro has been successfully running in the city for the past few years now. Despite that there is no decline in the number of cars that are daily sold in the capital. Without an appropriate policy intervention, the number is unlikely to go down in the near future. The Metro has only helped in restricting to some extent, the time each car spends on the road as many of them can be seen parked at the Metro Stations. However, with the constant increase in the number of vehicles on the roads, expansion of roads, flyovers, etc. will be continuously needed.

- **‘Increased industrial, business and commercial activities’** is mentioned as a positive environmental impact. However, the ground reality is that since the Metro is passing through considerable residential area – this so called positive impact is actually being feared than being welcomed.

Signing campaigns and *dharnas* have already been organised and this opposition is only gathering momentum. Newspaper reports have suggested that an elevated Metro and Bus Rapid Transit System coming up on the *Lala Lajpat Rai Marg* will make the area congested. At the same time, the road has been declared commercial under the new Master Plan and it is being feared that the area may be rendered unsuitable for residential purposes.

- The Metro is being seen as a recipe for disruption of peaceful life in South Delhi and residents fear they will be forced to sell out and move away. According to a newspaper report³, Traffic and Transportation expert with IIT, Dr. Geetam Tiwari has maintained that there is empirical data available that shows elevated highways and rail corridors cause hypertension and lack of sleep. The Metro officials have counteracted this saying that sound and visual barriers will be erected around the Metro rails to minimise these adverse impacts. However, with the elevated track in place – fitted with such high (in order to be effective) barriers, it is doubtful if **‘Better environmental landscape and aesthetics of the surrounding area’** will really be a possibility.
- **‘Sense of pride to the city and country having a world-class facility’**: Considering the Shahdara – Rithala Metro (Red) Line, all sense of pride vanishes each time one views the slums of East Delhi when on the elevated track from Rajiv Chowk to Shahdara.

NEGATIVE ENVIRONMENTAL IMPACTS

Impacts due to Project Location

a) Change in Land use: The Land use change is restricted to the alignment of the Metro track only. This, even when increased industrial, business and commercial activity is listed as a positive environmental impact. There will certainly be land use changes on both sides of the elevated track which need to be predicted after carrying out an appropriate study. The fact that there is no data on the existing land use along the proposed elevated corridor also needs to be taken care of.

b) Loss of Trees: Perhaps the most shocking and disturbing aspect of the EIA report is the fact that **the Average Cost of one tree (in Rs.) is calculated to be 700!** Following are just some of the ecosystem services provided by trees:

³ Elevated Metro fuels fear of commercialisation, Sharma, P.A., May 21, 2007

- Trees take in carbon dioxide during day time and release oxygen (that we need to live) continuously.
- Trees store a large amount of Carbon (of the Global Warming fame) in them and maintain it through out their life.
- Trees support the large number of biodiversity – insects, birds, etc. all required to maintain the earth's living system and hence support human kind.
- Trees are weather (and climatic) agents. They bring rains to an area and through complex mechanisms such as transpiration, determine to some extent the amount of rainfall and also play a major role in nutrient recycling.
- Trees act as natural barriers (e.g. sound barriers) and can be vital when found between a busy road and a residential colony. They act as a green buffer zone.
- Trees of some species in the capital were planted several decades ago. They are thus the heritage of the city. Many of the trees provide fruits (such as the *jaumun* trees, *Syzygium cumini*)
- Trees provide shade to us especially in the scorching heat of Delhi in summers.

Students in North Campus, Delhi University – who walk under the shade of the trees in order to reach their respective colleges from the Bus Stand/Metro Station were asked what they would do if the trees were not there. Some of them replied they will purchase an umbrella while most said they would prefer to take the *rickshaw*. On an average, a rickshaw ride costs Rs. 10/- from the main road. Thus, just this ecosystem service (shade) provided by the trees is MUCH more than just Rs.700.

Impacts due to Project Construction

The hazard to life due to working with heavy equipments, concrete slabs has not been taken into account.

Traffic Diversions and Risk to Existing Buildings

There will be much traffic problems in the construction phase and congestion will lead to elevated pollutant levels. The adjacent lane will also be a potential hazard zone since the traffic will be passing from very close to where heavy construction will be taking place.

Impacts due to Project Operation

The increase in electricity demand has not been mentioned. This section also needs to be reviewed and rewritten after going through the first five pages of this report.

ENVIRONMENT MANAGEMENT PLAN

b) Compensation for Loss of Trees

This figure needs to be revised. Also, who is to be paid this compensation? Will the money be used for afforestation activity?

c) Compensatory Afforestation and Fencing

The report does not mention where compensatory afforestation will take place. Also, *Eucalyptus* has been recommended as a tree species for 'reafforestation'. This, even when *Eucalyptus* is not native to India (let alone Delhi) and it comes with its own ecological problems.