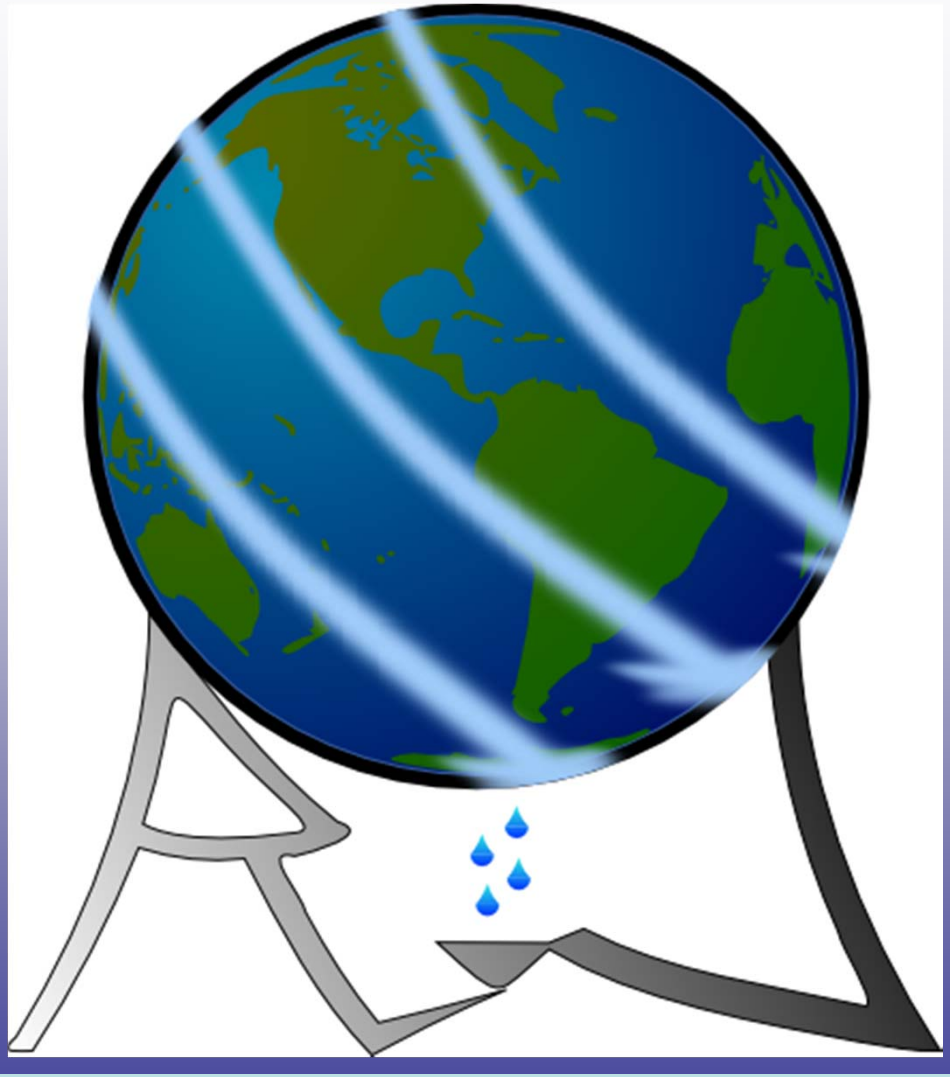
Rivers of the World Foundation



ROW Foundation – Program Planning and Implementation 2012-13

Oct 19, 2012

Rivers of the World Foundation

ROW Foundation – Program Planning and Implementation

BACKGROUND

Primary Objective:

Efforts to Cleanup/Protect highly polluted Rivers in

- US
- India
- China
- Philippines
- Nepal
- Bangladesh
- S. America
- Africa,
- Europe, and
- Other Parts of the World

Rivers of the World Foundation

Rivers of the World

Mission

The primary objective of the ROW Foundation is to make all efforts to cleanup highly polluted Rivers in US, India, SE Asia, S. America, Africa, Europe, and Other Parts of the World. This corporation is organized and shall be operated exclusively for charitable, educational, and scientific purposes . Some of the major objectives are as follows:

- Evaluate the eco-environmental status of the major rivers and tributaries of the world
- Identify a few Rivers initially which could be easily undertaken in the program
- Inform and involve the public in activities that foster the protection, enhancement, and sustainable development along the river banks and riparian areas.
- Identify, evaluate, and address threats to the biological, cultural, and economic components of conservation of the river and riparian areas.
- Acknowledge and promote the significance of the rivers, streams, and their adjacent riparian areas.
- Facilitate cooperation between private landowners, Local/Federal Govts. and other interested parties
- Encourage voluntary participation of all potential partners

Rivers of the World Foundation

ROW Founding Members and Board of Directors

Our Founding Members and Board of Directors

Dennis Haag, CWB, Founding Member
Occupation: Wetland Biologist

Donald G. Henry, NTPI,
Chief Accounts Officer
Occupation: Accountant

Dr. Matthew C. Perry, Biodiversity Expert, Member
Certified wildlife biologist and wetland scientist

Rajita Majumdar
Communications & Program Development Director

Ramkrshna Koduri, P.E., Founding member
Occupation: Retd. Chief Engineer, Chicago Waterworks

ROW Foundation was Formed in July 2007 as a Maryland Non-Profit/Non-Stock Corporation. In 2009 August we received the IRS Charitable Organization 501 c(3) status

ROW Foundation – Program Planning and Implementation

Rivers of the World Foundation

ROW Founding Members and Board of Directors..contd.

Subijoy Dutta, P.E., Founding Director
Occupation: Environmental Engineer

William E. Roper, PhD, P.E., President
Occupation: Engineer/Professor

ROW Foundation was Formed in July 2007 as a Maryland Non-Profit/Non-Stock Corporation. In 2009 August we received the IRS Charitable Organization 501 c(3) status

Rivers of the World Foundation

Rivers of the World Volunteer Members

Rivers of the World Volunteer members

Amrita	Rupananda	Rishikesh, Uttarkhand	
Ankita	Tiwari	Lucknow, India	
Brij	Khandelwaal	Agra, India	
Chandresh	Singh	Jaipur, India	
Cheenu	Srinivasan	Springfield, VA	
D.K.	Mital	Delhi, India	
Dilli	Neupane	Washington, DC, ENVIRONMENTAL ENGINEER	
Edmund	Wong	Arlington, VA	
Gautam	Lahkar	Guwahati, Assam, India	
Girish	Chaudhry	Delhi, India	
Hong	Zhao	Wuhan City, China CORDINATOR	
Hope	Shakya	Glen Burnie, MD	
Jittender	Kapoor	Delhi, India	
Johanna	Von Halem	Bavaria, Germany	
Cindy	Wallace	Edgewater,	Maryland

Rivers of the World Volunteer members..contd.

K.K.	Das	Silchar, India
Kamal	Taori	Wardha, India
Kusuma	Cunningham	Columbia, Maryland
Minakshi	Arora	Delhi, India
Monica	Das	Bhubaneswar, India
Noel	Hechanova	Iloilo City, Philippines
P.C	Abhilash	Kerala, India
Pawan	Sharma	Gokul, UP,India

Phalguni(Hirak)	**Bhattacharyya**	**Kolkata, India**	
Pinaki	**Dutta**	**Kolkata, India**	
Proloy	**Basu**	**Kolkata, India**	
Pushpa	**Morolla**	**Hyderabad, India**	
Rajita	**Majumdar**	**Olney, MD**	
Sharvan	**Sharma**	**Gokul, India**	
Shravan	**Kumar**	**Agra, India**	
Sucharit	**Dutta**	**Kolkata, India**	
Suresh	**Soman**	**Delhi, India**	
Tanja	**Crk**	**Arlington, VA**	
Tushar K.	**Guha**	**Kolkata, India**	
Waqi	**Alam**	**Havre-Dde-Grace, MD**	

Commonalities in Rivers of the World Despite Diversities

First

- A synopsis on *Rivers of the World Foundation* –
  - Where and How we Flow

- **Working Hand in Hand With Local Governments and Communities**

Commonalities in Rivers of the World Despite Diversities

First..contd.

- A synopsis on *Rivers of the World Foundation* –
  - Where and How we Flow

- **Countries Where we Currently work**
  - China
  - India
  - Nepal
  - Philippines
  - United states

…and Flowing

P: Commonalities in Rivers of the World Despite Diversities

First..contd.

- A synopsis on *Rivers of the World Foundation* –
  - Where and How we Flow
- **Our Goal, Vision and Interaction**
  - *Clean and Vibrant Waters*
  - *Connected Communities*
  - *Sustainable Development*
  - *Restoring and Protecting Rivers and*

…and Flowing

Commonalities in Rivers of the World Despite Diversities

First..contd.

- A synopsis on *Rivers of the World Foundation* –
  - Where and How we Flow

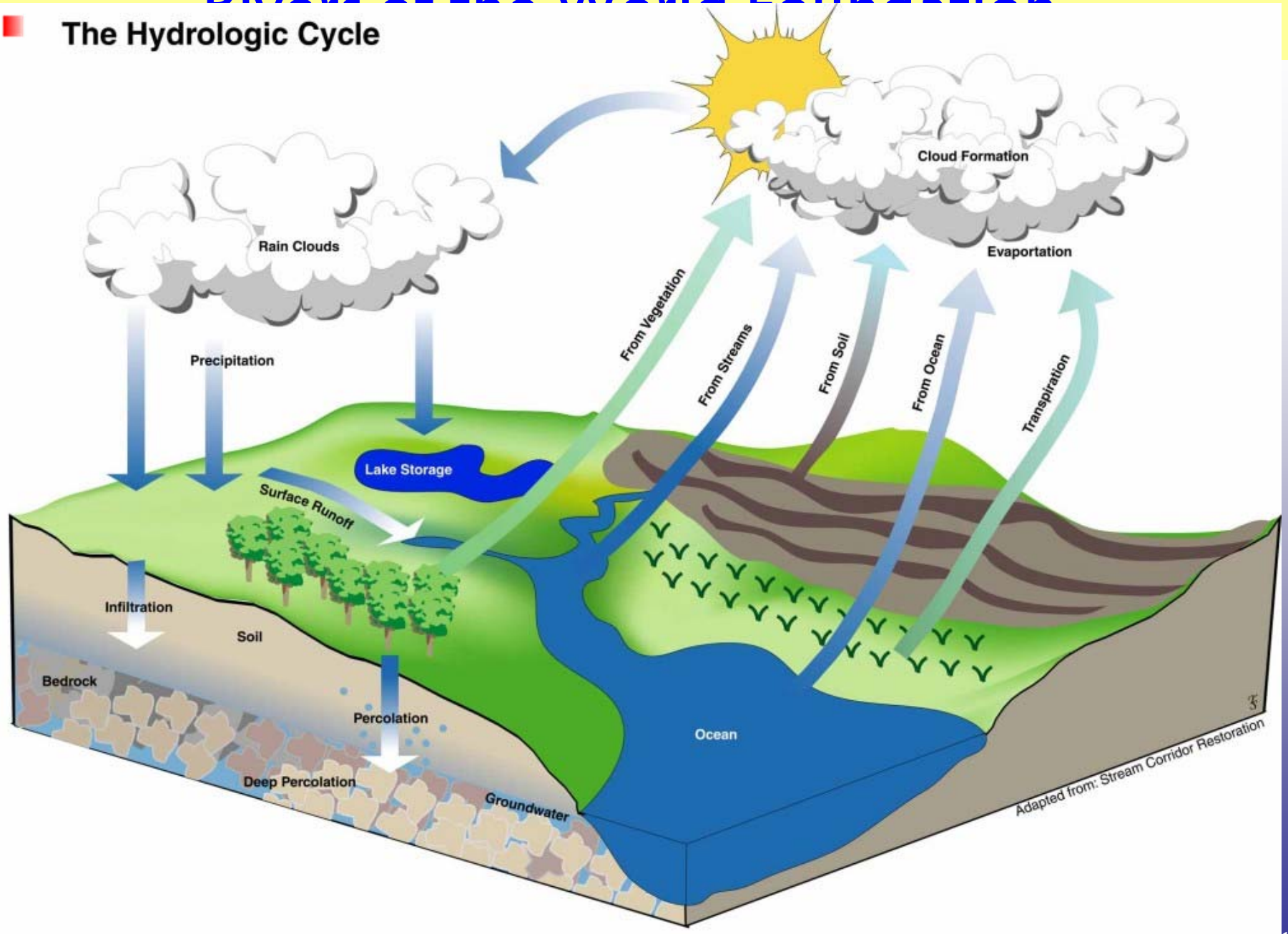
- **Want to Start helping your own Rivers and Streams?**

- *Visit **www.rowfoundation.org***
- *Visit our blogsite:* **http://riversandbeyond.wordpress.com/**
- *Become a member (download the form and submit)*
- *Guide the Flow path to your direction*

…and Flowing

Third… Rivers of the World Foundation

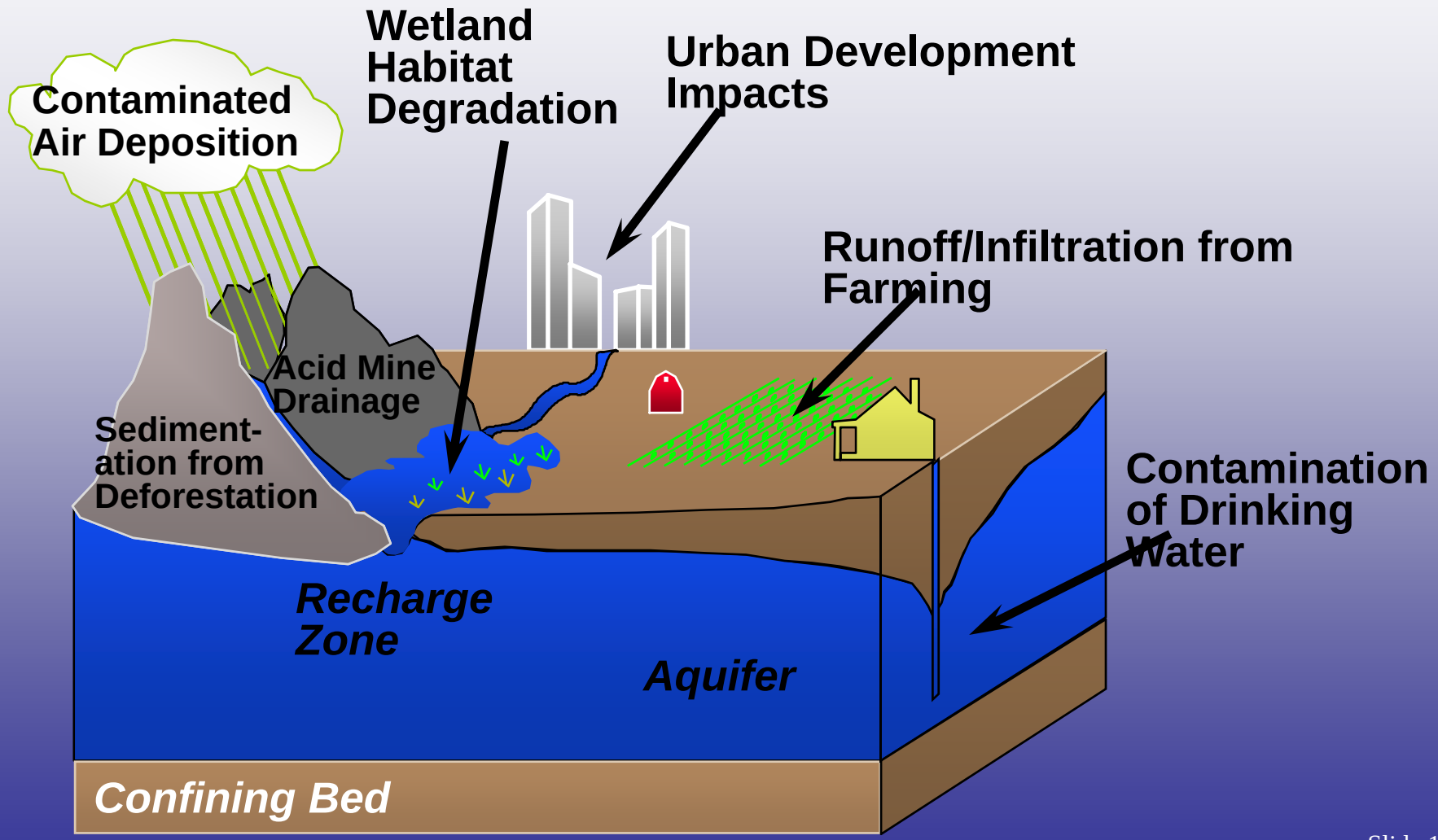
The Hydrologic Cycle



Fourth…Cont'd…

Rivers of the World Foundation
Human Factors

- Factors affecting Rivers, Waters, Life



Rivers of the World Foundation

Human

Fourth…Contd…

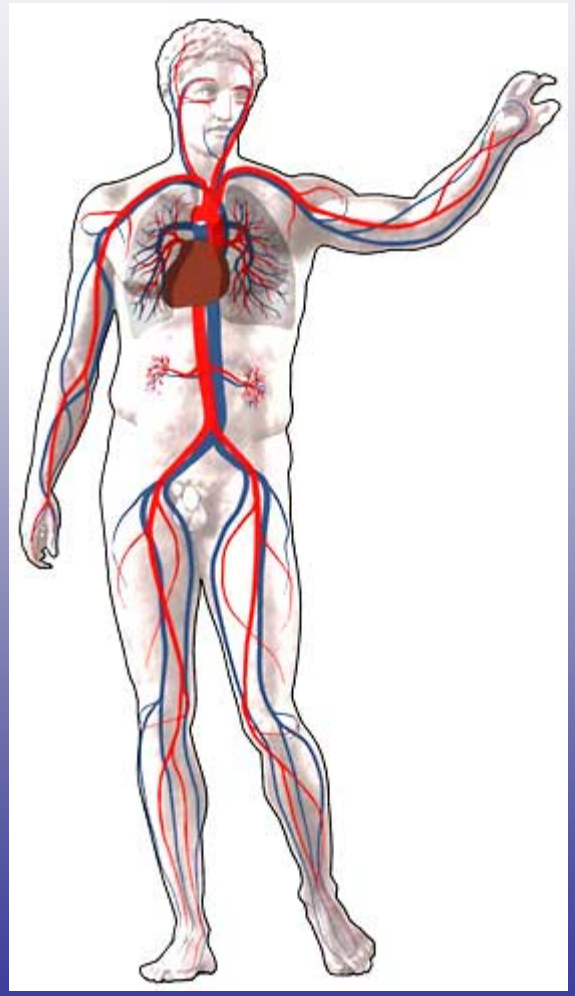
- Factors affecting Rivers, Waters, Life

Commonalities in Rivers of the World Despite Diversities

Fifth

- Watersheds – like Neurological Structure of Rivers

Human Circulatory System



River of Life

Rivers of the World Foundation

Major activities during the past year (Aug 1, 2011 to July 31, 2012), Fiscal year for Rivers of the World Foundation are as follows:

- Attended a Regional Meeting of the Iloilo River Commiittee involving all Governmental Bodies, Industries, Congressman, and Mayor at Iloilo City, Philippines, Dec 2011.
- Met with the Environmental Minister, West Bengal, India, Dec 2011.
- Visited Several Rivers in India:
  - Barak-Silchar,
  - Yamuna-Agra, Delhi,
  - Ganges-Rishikesh) and initiated River Protection Activities

- **World Water Day (WWD-2012) Activities Summary Report –**
  - **http://www.rowfoundation.org/0/WWD2012_Reports**

- **Barak River Water Quality Exploration and follow up Dec 2011**

Rivers of the World Foundation

Major activities during the past year (Aug 1, 2011 to July 31, 2012),..Contd..

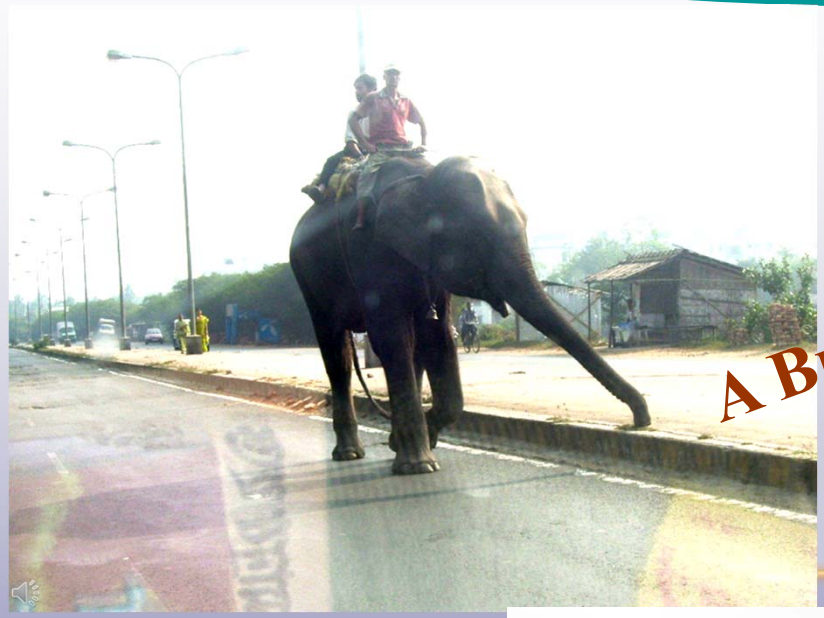
- ROW was the Major sponsor of 1st Philippine international River Summit - Summary Highlights from the Summit in Iloilo - Visit the link below-
- http://rowfoundation.org/content/row/IloiloSummit_article-F.pdf

At the 1st International River Summit: Success and Then Some ...

By Rajita Majumdar

- Presented - INDIA - Rivers and More in PICTURES
- Thursday, January 12,2012 after india Visit (Dec 2011)–
  - Yamuna River – New Delhi, Agra
  - Ganges River – Rishikesh
  - Barak River, Silchar
  - Hooghly River – Kolkata
  - Bhairab River, Benekhali, WB
  - Yamuna River, Agra

INDIA - Rivers and More in PICTURES



A Brown Bag

Bhairav River, Benekhali, West Bengal

Observations by Subijoy Dutta

INDIA - Rivers and More in PICTURES

Agra Area

Constructed Wetland System Installed – suggested ~8 years ago

INDIA - Rivers and More in PICTURES

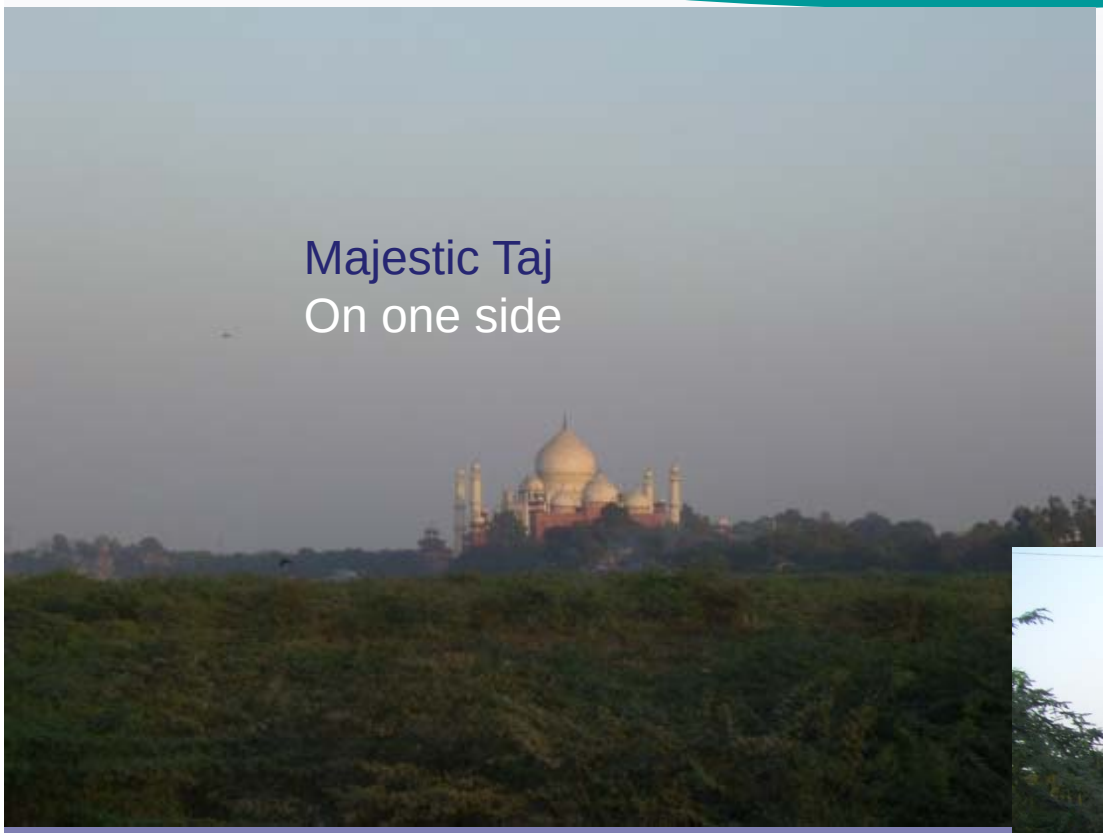
Agra Area

INDIA - Rivers and More in PICTURES

Agra Area

INDIA - Rivers and More in PICTURES

Agra Area



Majestic Taj
On one side

Smelly Mantola Drain on the Other

INDIA - Rivers and More in

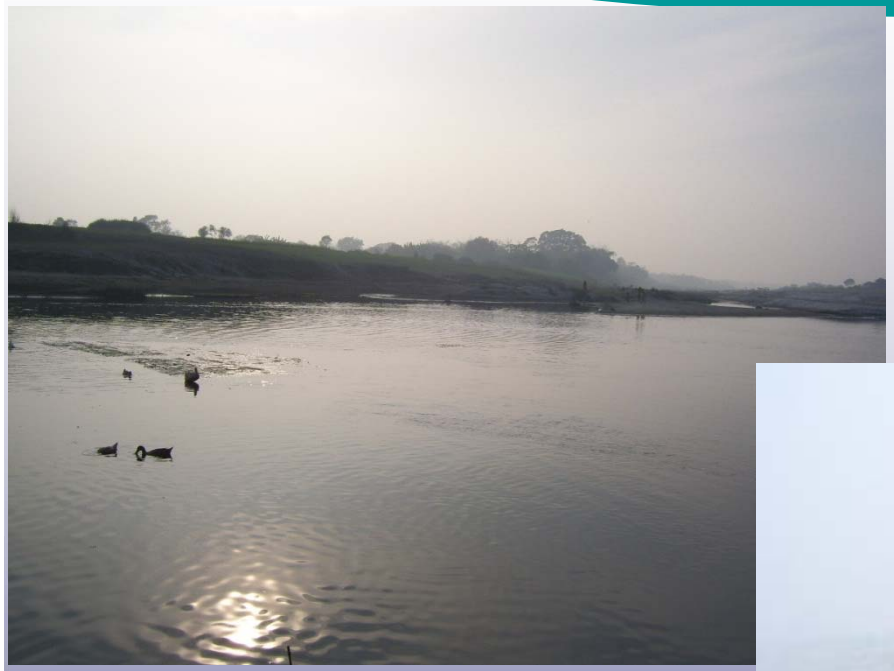
Agra Area

Agra Area

Yamuna River
at Balkeswar Ghat, agra

INDIA - Rivers and More in PICTURES

Benekhali Village




Guess his age?

Deep Pond™ System (Hyderabad) Case Study

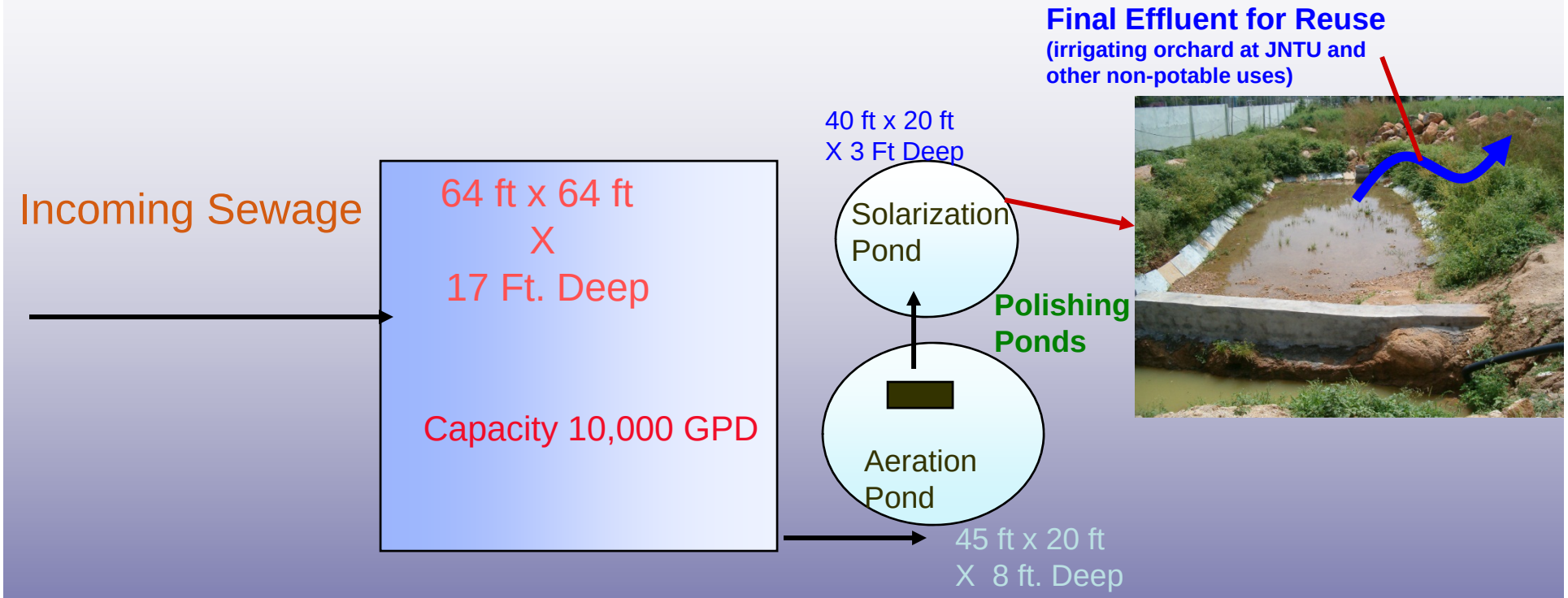
Project Objectives and Goals:

The project goals and objectives are furnished below:

- Constructing, Operating And Maintaining The Deep Pond™ System
- Monitoring Results For The Operation And Functioning Of The System;
- Developing The Economics And Business Aspects Of Deep Pond™ System; And
- Educating Local People And Other Professionals About The Benefits Of Anaerobic Digestion.

Rivers of the World Foundation

Deep Pond™ System (Hyderabad) Case Study ..contd.



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Deep Pond™ System (Hyderabad) Case Study ..contd.

- Use of low-cost biological treatment systems have been studied by the authors for the past several years
- Amongst many different low-cost alternatives, the Deep Pond™ systems was selected for the following inherent advantages

- *Advantages and Benefits of Using a Deep pond™ System*:

1. This system can be used in most places around the world with multiple benefits of clean water, energy production and other beneficial uses such as irrigation, fish culture and recreation.
2. It is relatively simple to install, operate and maintain. It has a very low maintenance cost and requires lesser manpower to operate and maintain.
3. The Deep pond™ system installed in Hyderabad is treating 10,000 Gallons per Day with only three (3) moving parts.
4. No chemicals are used for treatment, so there is no hazard to human, plant or animal life. The treated water can be reused with very little post-treatment or polishing.
5. This system does not produce any sludge, since anaerobic digestion causes the sludge to be transformed into methane, carbon dioxide, and water. Past experience with this system in US required no sludge removal for 20+ years.
6. This system is flexible. Once it is installed, its treatment capacity can be increased by adding ponds in parallel trains.

Deep Pond™ System (Hyderabad) Case Study ..continued

POND #1
(Deep Pond)
Dec 26, 2004

Deep Pond™ System (Hyderabad) Case Study ..continued

POND #2
(Aeration Pond)
Dec 26, 2004

Deep Pond™ System (Hyderabad) Case Study ..continued

Rivers of the World Foundation

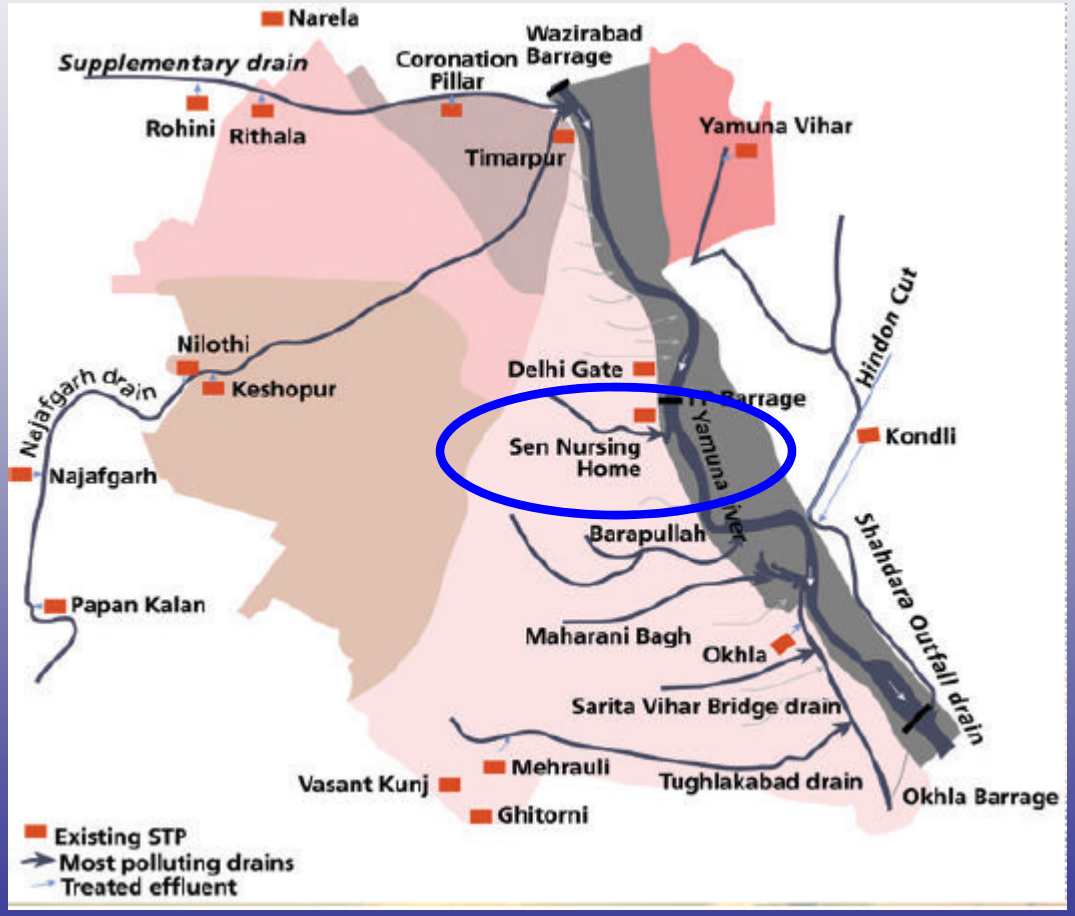
Preliminary Results from the Deep Pond™ System, Hyderabad, India.

Number	Sampling Points	Electrical conductivity (µmho/cm)	PH (SU)	Total solids (mg/L)	Organic solids (mg/L)	BOD** (mg/L)	COD** (mg/L)	DO** (mg/L)
1	Inlet Of Deep Pond (Pond #1)	762	7.28	600	140	18	24	3.9
	Outlet Of Deep **Pond (Inlet Of Pond#2)**							
2		756	6.9	620	160	3.6	48	3.3
3	Outlet Of Pond #2	765	7.1	760	200	9.6	39	6.4 ++
4		724	7.06	680	220	3.0	16	4.9

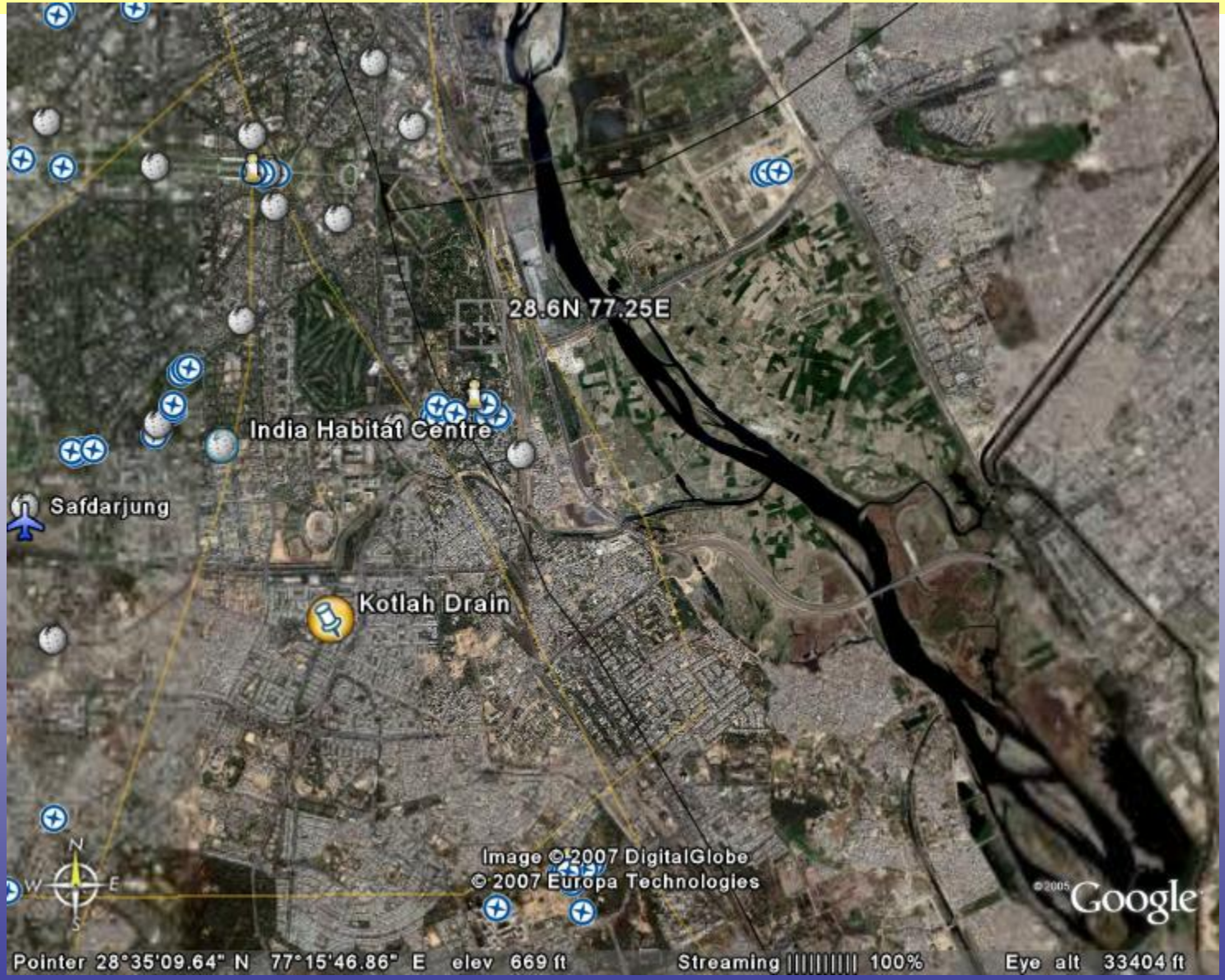
** BOD – Biochemical Oxygen Demand; COD – Chemical Oxygen Demand; DO – Dissolved Oxygen
++ - Note the effect of aeration – The Oxygen content is almost doubled at the effluent of Pond #2

Rivers of the World Foundation

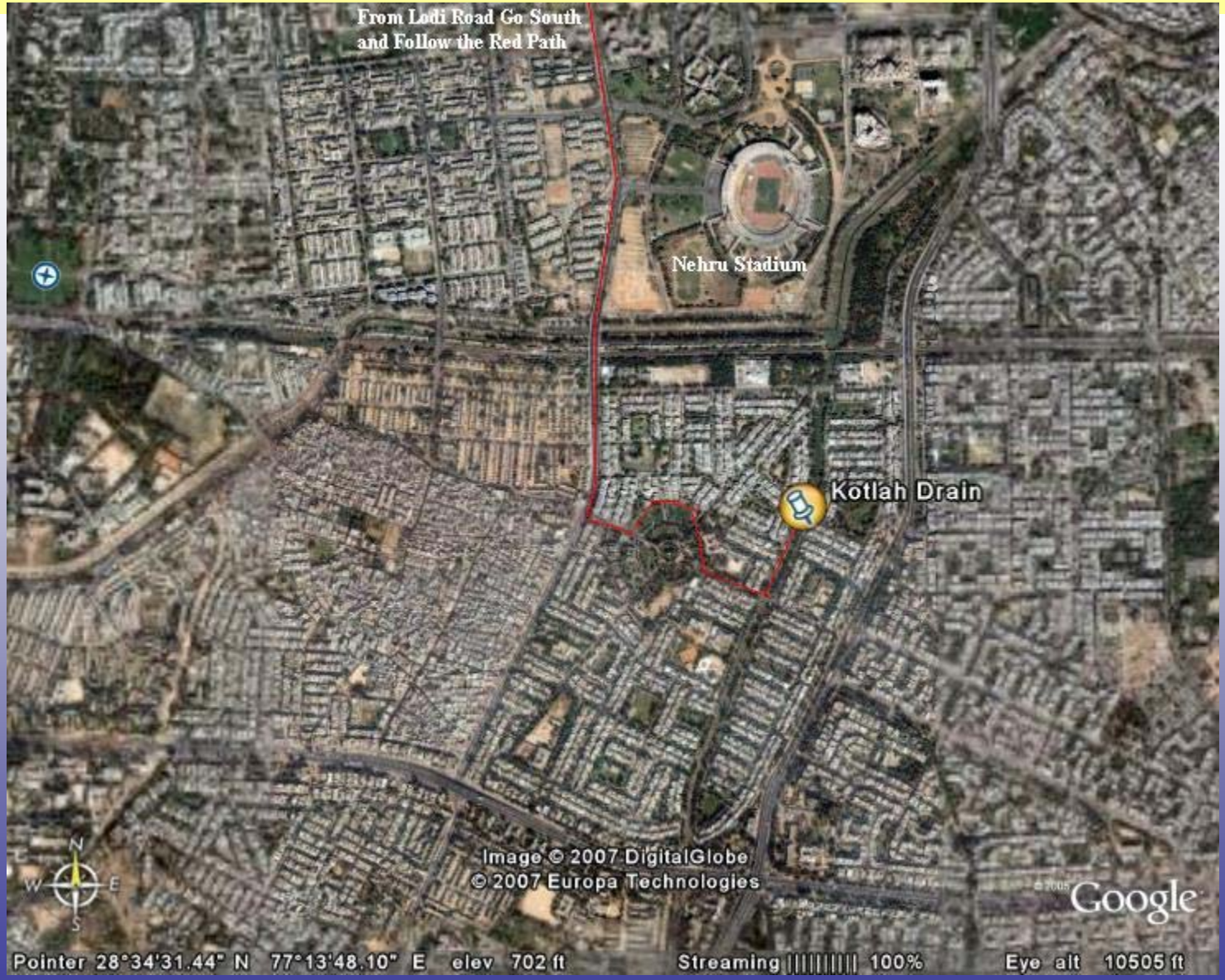
Proposal Submitted to Delhi Jal Board in 2004
by S&M Engineering, India, (http://rowfoundation.org/1/snmengg)
– Updated/Revised in 2005-2006



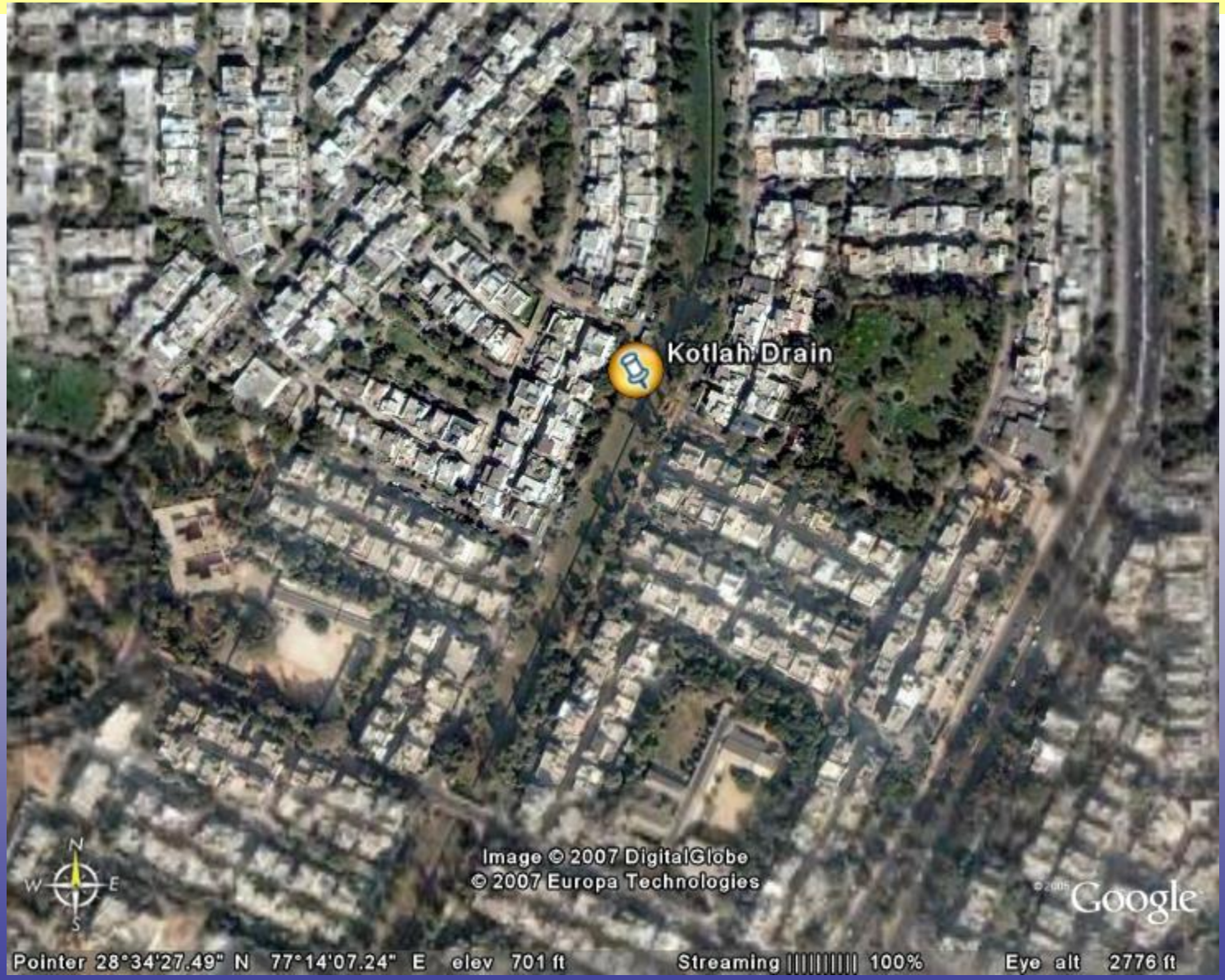
Rivers of the World Foundation



Rivers of the World Foundation



Rivers of the World Foundation



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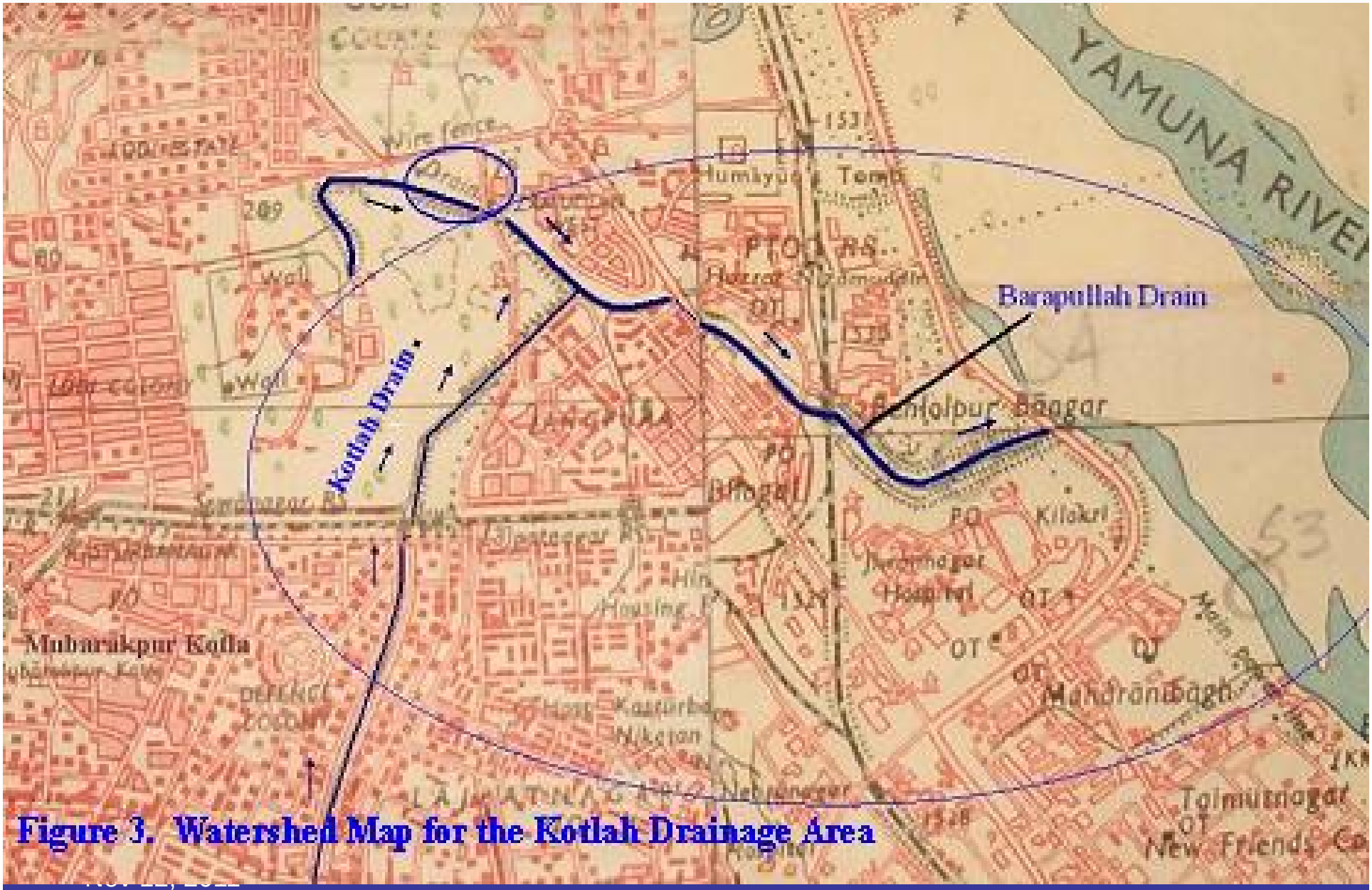
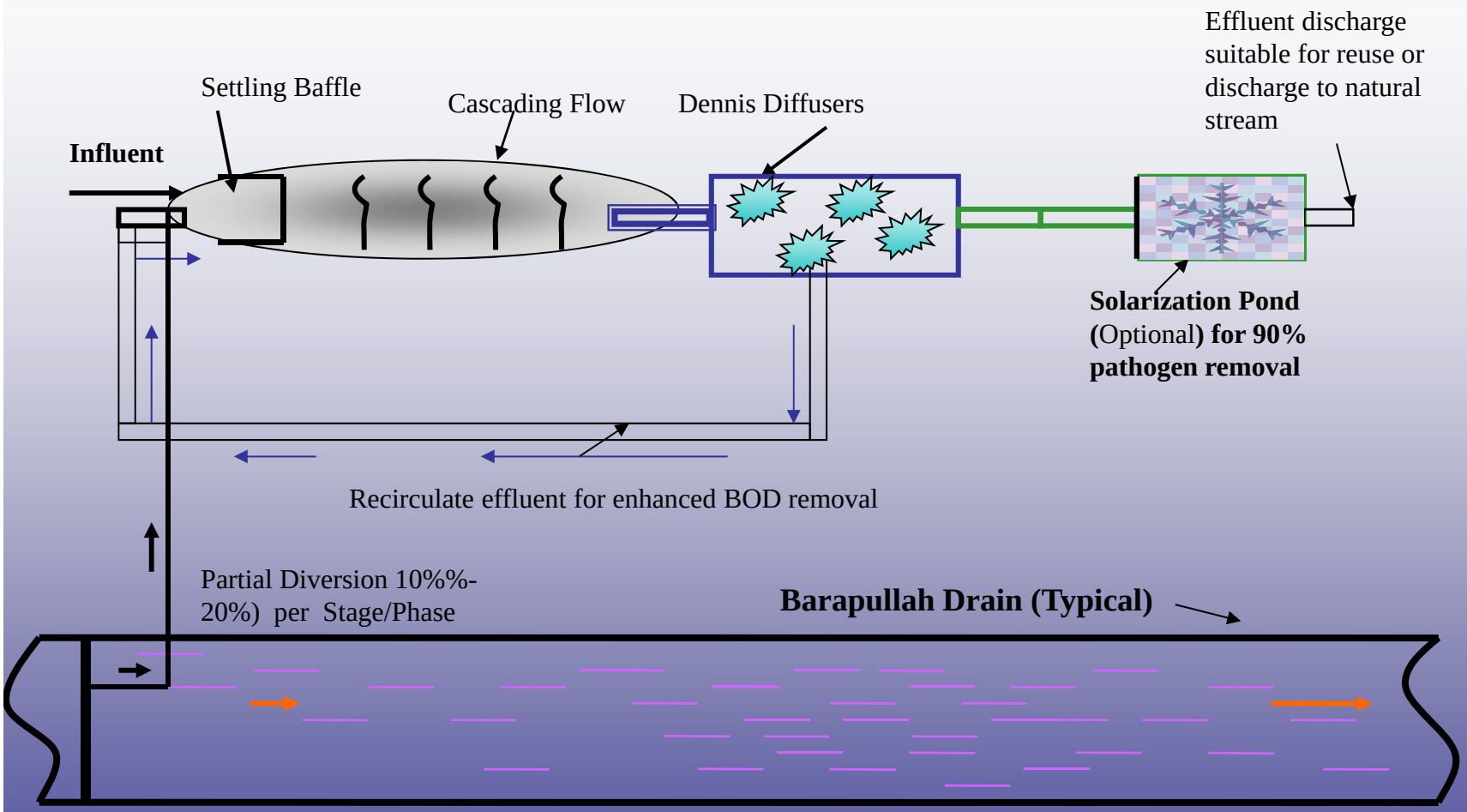


Figure 3. Watershed Map for the Kotlah Drainage Area


Kotlah Drain

Schematic of W/W Treatment For A Typical Nullah Draining To the Yamuna River



Rivers of the World Foundation

The basic assumptions, design parameters and relevant constraints are listed below

1Reclamation Capacity – 350,000 gallons/day; however some additional capacity may be kept for the design max. condition and for possible enhancement of the facility.

2BOD inflow- 174.6 Kg/day or 132 mg/l (CPCB 2000)

3Influent - Sewer and Stormwater runoff

4Total Volume- 43.1 cu. meter/day or 350,000 gallons/day

5BOD Effluent- <20 mg/l OR as per **CPCB/Delhi PCB** norms

6H_2O Quality- Suspended Solids and Other effluent characteristics as per CPCB

7Soil - Bearing Capacity – assumed min. 10T/square meter

8Concrete - M-25 (250 Kg/cm^2) grade (in touch with soil), Other–M-20 (200Kg/cm^2)

9Discharge - will be aesthetically pleasing and suitable for irrigation or other secondary uses.

1Landscape - Special landscaping and cascading aeration systems should make the reclamation visually pleasant for the residential/business district in and around the area.

1Clearance - All necessary clearance to start construction on the land specified in Figures 1 and 2 have to be acquired by the Delhi Government or other organizations. SNM will coordinate all such activities through our local representatives, Mr. D.K. Mital, Ram Koduri, P.E., and Mr. Dilip Biswas.


A Small Difference – Gau Ghat
Identified in Dec 2000 – Better in Nov 2007

Conclusions/Recommendations

1. **This Fiscal year we'd like to elevate ROW activities to a New Platform with New/Enthusiastic members, Partners, and Idea**
2. **Small steps at a time –**
   - **Initiate Small Demonstration Projects involving any of the following:**
     - **Biological Treatment of a polluted Stream/Lake or Drainage Canal**
     - **Locate suitable areas for Installation/Demonstration of -**
       - **Innovative Diffuser/Aeration Systems**
       - **Deep Pond™ Systems**
       - **Constructed Wetland Systems**
       - **Other low-cost/Biological Systems**
       - **Involve Communities – awareness programs**

Rivers of the World Foundation

QUESTIONS/Comments ?

You may send Questions/comments to Subijoy Dutta,
Subijoy@verizon.net
Visit
www.rowfoundation.org