

# Flooding in Kampong Chhnang

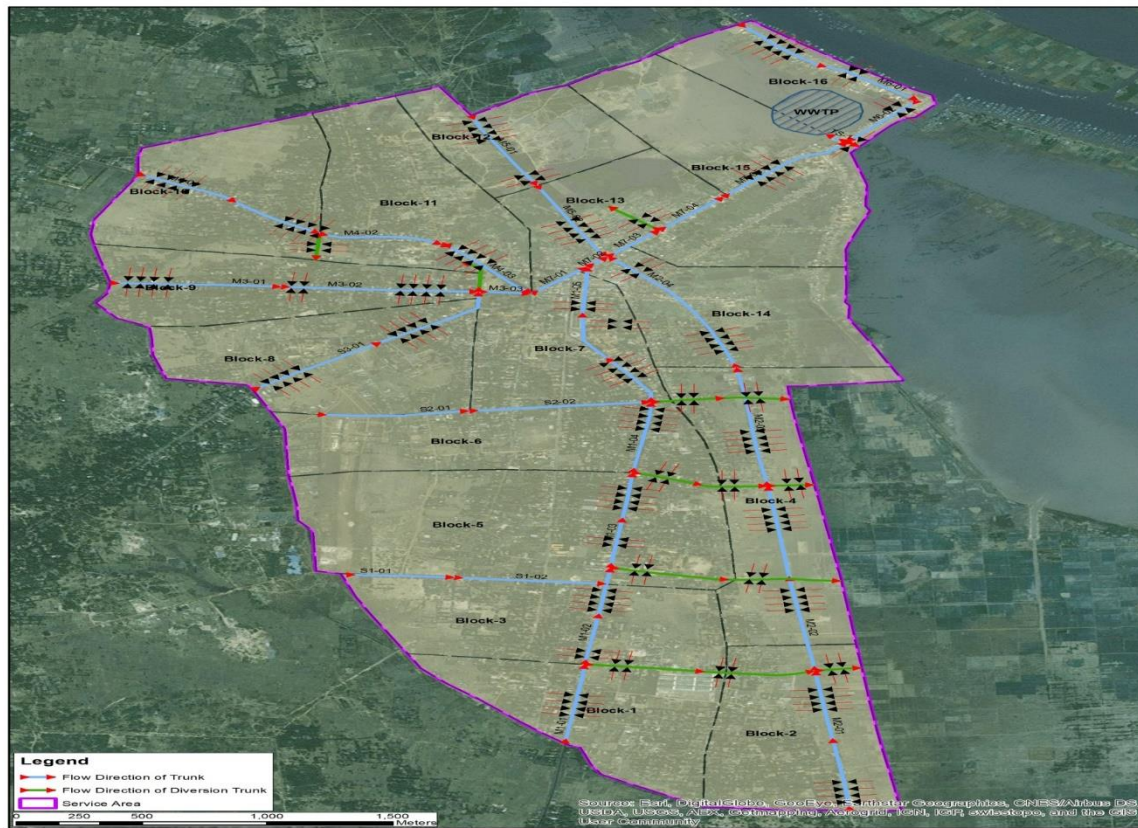


❖ Low land of Kampong Chhnang city get flooded every year

❖ 70% of the city is flooded every 10 to 15 years.



## Collection Systems



2-yr return period used in drain design

Non-lined RC pipe used for drains; PE-lined pipe will double unit rate

Trunk sewer manholes every 50m

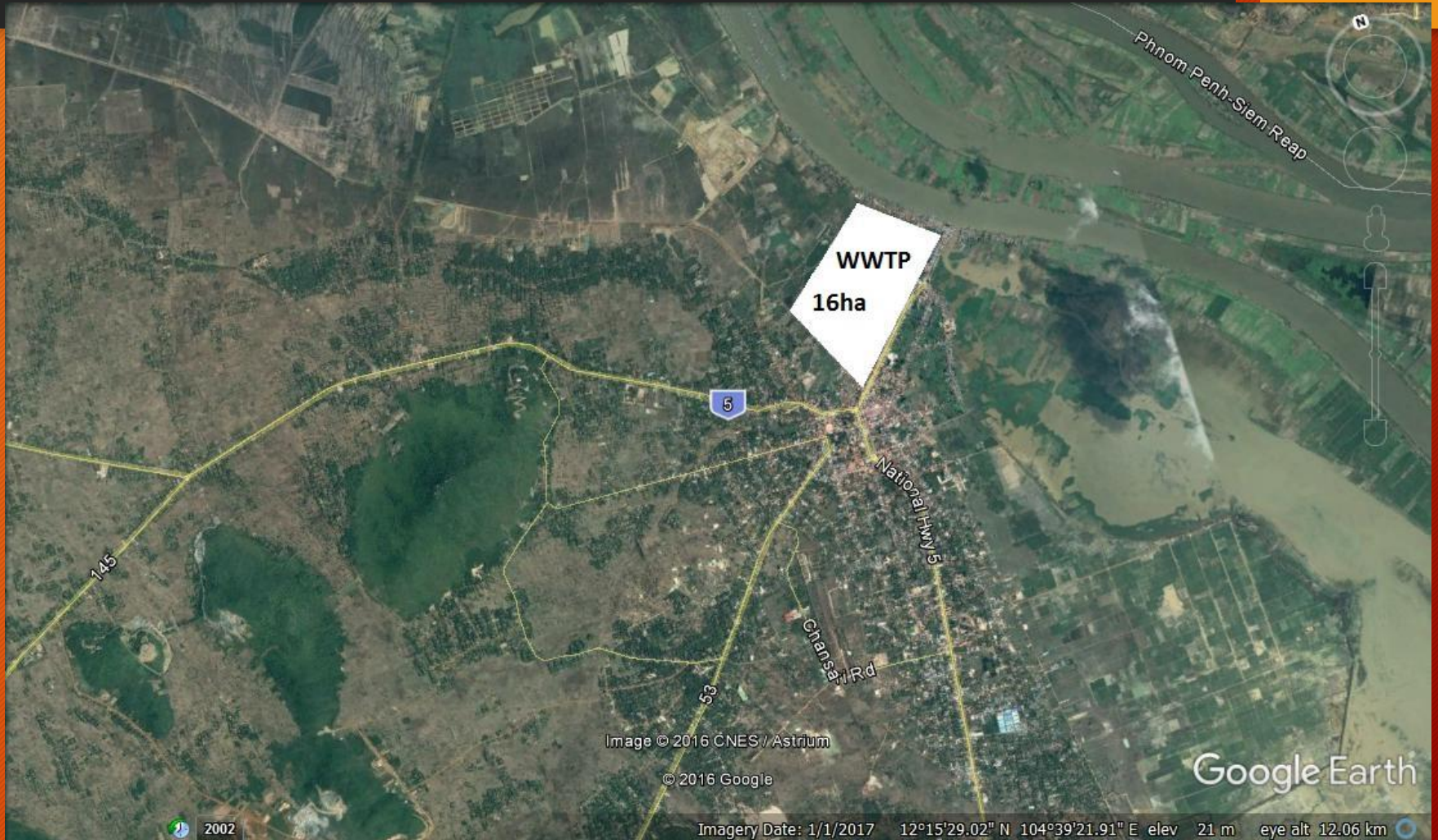
Maximum depth of any main trunk approx. 3m

Combined sewer overflows can release water without pumping

Drains are at roadside – no road reinstatement required

# Proposed Tonle Sap II Project

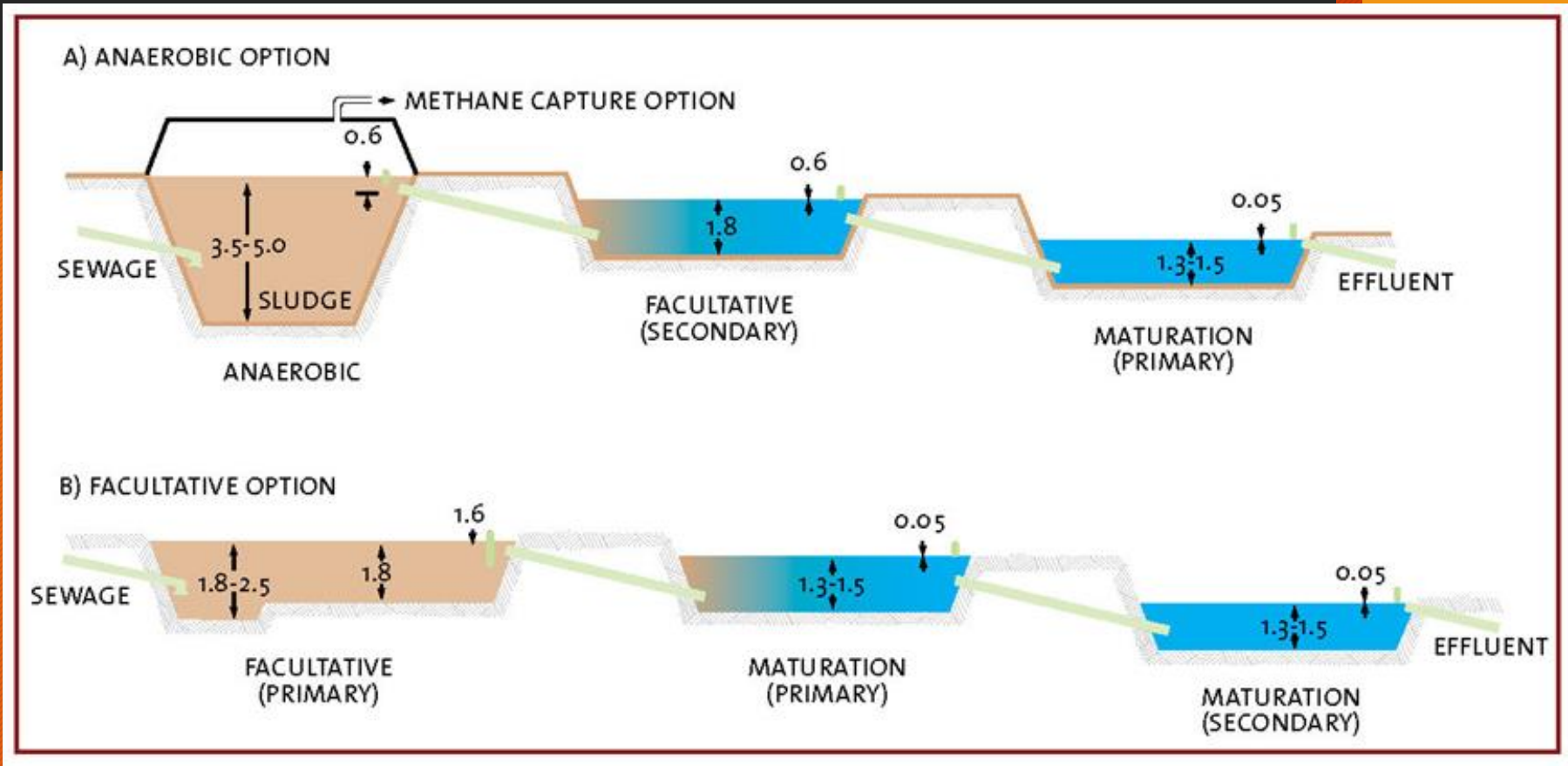
Wastewater treatment plant (lagoon system)



# Environmental and Social Safeguards

- ADB guidelines have three categories (A, B, C):
  - category B requires an Initial Environmental Examination (IEE)
  - category A requires a full Environmental Impact Assessment (EIA).
- Government of Cambodia sub-decree 72 (1999) outlines a process for Initial Environmental Impact Assessment (IEIA):
  - Wastewater treatment plants (and also waste processing and burning) of all sizes
  - Drainage systems with a service area greater than 5,000 hectares,
- The GoC IEIA is equivalent to the ADB IEE.
  - E.g., WWTP for Sihanoukville was a Category B project and only an IEE was conducted; this corresponds to the GoC IEIA, and there were no serious impacts that would have necessitated a full EIA

# Technical and financial details of proposed WWTP



Collection and Treatment Project Cost Estimate: 15M USD (as of March 2017)  
O&M Estimated Annual Costs: For Collection Network 86,000 USD  
For WWTP 16,000 USD

# State of Municipal Finance

The city does not have financial capacity to implement investment plans or to finance O&M.

- The municipalities were established by law in 2008 but still have limited power to borrow or to raise own-source income
- Property tax has been legalized as a national tax but has not been implemented outside Phnom Penh.
- Municipalities have not developed databases that identify potential targets for tax and user charges, apart from the One-Window Service Office (OWSO)
- The funds from the OWSO may not be used to deliver public services
- The funds available under District / Municipal Fund are not sufficient to implement the three year rolling plans
- No charge for a service is permitted unless authorized by specific legal instruments. For such funds to be used by the local government to deliver the service, the legal instrument must also confer authority to retain the funds collected

# Challenges in Funding Tonle Sap II

- (i) ADB due diligence requirements
- (ii) Funding for the soft component (i.e. capacity development, community preparation, etc.)
- (iii) Resettlement issues for <50 families
- (iv) Additional costs for climate-proofing the projects
- (v) Capacity-to-pay vs Willingness-to-pay of households to connect to the system
- (vi) Municipality does not have sufficient funds from revenues to cover operating expenses

## How can the city find innovative ways to finance Operations and Maintenance?

- Capital expenditure need to be finalized by the MPWT
- PPP / build-operate-transfer
- Local sources (e.g. combination of city and national government revenues)
- Create a public enterprise
- Can O&M be fully covered by national government?
- Regional approach and interactions with different funders
- Try to collect property and business tax (not yet allowed legally); urge national government to empower local governments



# What is the best model for wastewater collection and treatment service delivery?

- a. Autonomous wastewater unit
  - b. Municipal wastewater department
  - c. Under Provincial Department of Public Works and Transport
  - d. Other options
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- Look first at the Best Financial Model
  - In Legazpi, 80USD spread out 36 months collected from each HH to desludge septic tanks
  - In Malolos, private company incharge of facility pays a lease to city
  - Consider Private sector engagement

# What steps should the city do to prepare the communities for the project?

- Regarding: benefit of project; convince them to connect to the system, and pay service fees; resettlement
- ensure that project have direct and indirect benefits to the affected families
- Direct interactions at the Sangkat and village levels to increase Project Ownership by the people
- Relocation: new place should be near livelihood; should not be far from original location
- Explore external organizations who support relocation (e.g. Slum Dwellers In'tl).