

VI. LOCATION OF TECHONOPARK

6.1 Rationale and Criteria

The decision to locate the Technopark in the Colombo area was principally made on the basis of the following considerations:

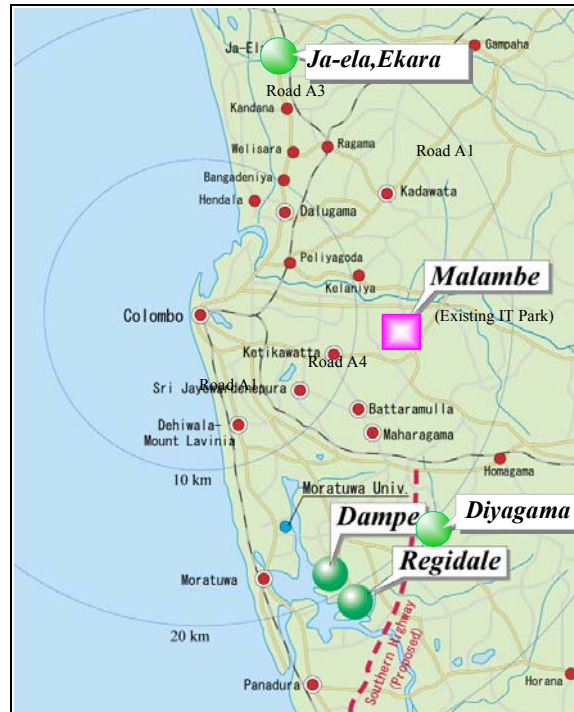
- (i) Present and future condition of the broad band telecommunications network:
The optical fiber cable network developed in the Greater Colombo area is a key for the Technopark where high-speed digital telecommunications is required. It is, therefore, desirable that the Technopark be located closer to the Greater Colombo Optical Fiber Cable Network.
- (ii) Location of the existing IT-related industry and IT-related project:
The Malambe IT Park, including a training center of SLIIT (Sri Lanka Information Technology Institute), is being developed by a private-public initiative in the Malambe district of South Colombo. This project should better be taken into account from the viewpoint of clustering.
- (iii) Location of academic institutions for promotion of linkages and partnership:
In the Greater Colombo area, Moratuwa University and Colombo University are prominent IT education and research centers. The linkages with these academic institutions should better be taken into account.

In addition to the above criteria, land availability, the environment, and infrastructure should be considered as essential factors in selecting the location of the Technopark in the Colombo area.

6.2 Alternative Locations

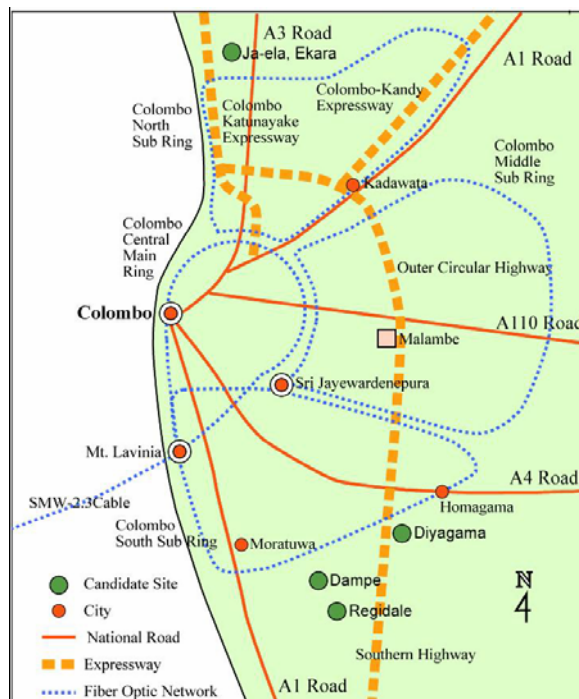
Four candidate locations, (i.e., Dampe, Regidale, Diyagama, and Ja-ela-Ekara), were identified on the basis of the above criteria, as shown in Figures 6.1 and 6.2. Dampe and Regidale sites were selected through the Master Plan study. Diyagama and Ja-ela-Ekara sites were newly suggested as candidate locations during the course of this follow-up study.

Three candidate sites (Dampe, Regidale, and Diyagama) are scattered in southern Colombo, while the Ja-ela-Ekara site is located to the north of Colombo.



(Source) JICA Study Team

Figure 6.1 Location of Alternative Sites



(Source) Study Team

Figure 6.2 External Infrastructure around Alternative Sites

The physical conditions in and around the alternative sites are summarized in Table 6.1.

Table 6.1 Physical Condition of Alternative Sites

Items		Dampe	Regidale	Diyagama	Ja-ela, Ekara
Site Area		85 acres (34 ha)	76 acres (30 ha)	158 acres (64 ha)	100 acres (40 ha)
Access	Distance from Colombo	18 km	22 km	20 km	18 km
	Access to Moratuwa Univ.	4.5 km	7.0 km	9.5km (30minutes)	35km(more than 1hour)
	Access to Highway	To Southern Highway Roughly 3km	To Southern Highway Roughly 3km	To Southern Highway Roughly 0.2km/Closer to Outer Circular Highway	To Colombo-Katanaya ke Highway Roughly 1km
Site condition	Geography	Almost Flat	Hilly	Hilly	Flat
	Land Use	Field and detached houses	Field, detached houses	S.L.B.C transmission station (not in operation)	Wet Land (landfill is required)
Land Availability		Gov. valuation not accepted by owner, very difficult	BOI Obtained Access Road not yet	Ownership S.L.B.C	Owned by Army
Condition of external infra-structure	Water supply	Groundwater	Groundwater	Groundwater	Groundwater
	Telecommunication (Fiber Optics)	Moratuwa Switching Station	Moratuwa Switching Station	Maharagama Switching Station	Northern Colombo FO Ring
	Transportation	2km from Route B6, difficult to construct Access Road	2km from Route B6	3km from A4 2km from B5	0.1km from A1

(Source) JICA Study Team

6.3 Proposed Location

The advantages and disadvantages of each alternative site are tabulated below.

Table 6.2 Selection of Recommendable Location

Sites	Acre	Advantages	Disadvantages	
Diyagama	158	<ul style="list-style-type: none"> • Easy land acquisition (SLBC) • Direct access from the provincial road • Easy access from Southern Highway 	<ul style="list-style-type: none"> • Comparatively long distance from Moratuwa University 	○
Dampe	85	<ul style="list-style-type: none"> • Water front scenery • Proximity to Moratuwa university 	<ul style="list-style-type: none"> • Difficulty of land acquisition • Poor road access 	×
Regidale	76	<ul style="list-style-type: none"> • Water front scenery • Proximity to Moratuwa university • Easiness of land acquisition (BOI) 	<ul style="list-style-type: none"> • Poor road access • Hilly topography 	△
Ja-ela Ekara	100	<ul style="list-style-type: none"> • Easiness of land acquisition (Army) • Easy access from National Road 	<ul style="list-style-type: none"> • Wet-land (landfill is necessary) 	△

(Source) JICA Study Team

The Diyagama site is owned by the Sri Lanka Broadcasting Corporation (SLBC): The use of Diyagama by SLBC as a medium-wave transmission station has been terminated and the site remains idle. SLBC has no objection to the site being used for other purposes. The Diyagama site is also convenient to the current road access (Routes A4 and A110) as well as to the future access to the Southern Highway. Although it is slightly further from Moratuwa University, Diyagama is evaluated to be the best location among the alternative sites. It is therefore recommended that the Diyagama site be proposed as the location of the Technopark.

6.4 Physical Condition at the Diyagama Site

1) Natural Condition

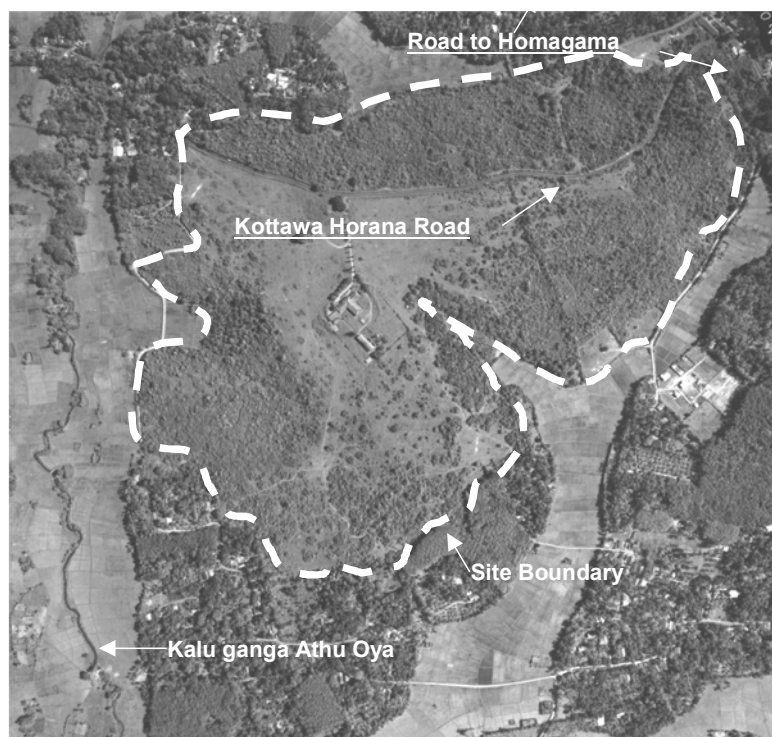
(i) Topography

Diyagama is located at the center of a triangle formed by Homagama, Kottawa, Kahatugama, about 20 km to the southeast of Colombo. The Diyagama site has undulating topography with elevation ranging from El. 10 m to 25 m and a gross area of about 64 ha (158 acres). A topographic survey was carried out to prepare a 1: 2,500 scaled map in the course of this study.

To the west and south, the site faces an unpaved road of about 3 m width at present. To the east, it borders with the Kottawa-Horana Road (Route A110). The Kalu Ganga Athu Oya and its stream flow along the western and southern boundary. The water level of the tributary fluctuates by a few meters during the flood season, although it appears to be only a small stream in the dry season. The surrounding land is used for paddy fields and rubber plantations.

As the site was previously used by SLBC (Sri Lanka Broadcasting corporation), there are five transmission towers, administration office, and incidental facilities of SLBC.

The aerial photo in the following page shows the current condition of the Diyagama site.



(Source) Survey Department

Figure 6.3 Aerial Photo of the Diyagama Site

(ii) Geology

The Diyagama site is underlain by Precambrian metamorphic rocks belonging to the Highland Series of Sri Lanka. The main rock types found in the area are cordierite gneiss, coarse grained marble, and undifferentiated protozoic gneisses. The site is comprised mainly of cordierite gneiss. The paragneisses are granoblastic and contain cordierite, K-feldspar, biotite, quartz and garnet. These Protozoic metamorphic rocks are overlain by Quaternary laterite deposits. These are mottled, deep red to reddish brown ferruginous material.

The site has the geological characteristics suitable for development of the Technopark. According to the results of the geological drilling, the stiff sandy soil with N-value of more than 20 is seen up to approximately 15 meters in depth below the ground level and hard base rock appears below 15 meters.

From the result of the pumping test, the groundwater yield within the depth of the soil overburden is insufficient. Results of the geological and hydrogeological surveys are presented in Appendix-1.

(iii) Vegetation

Forest vegetation is reserved in the Diyagama site as shown in Figure 6.3. Dense forest, seen particularly on the perimeter of the site, should be reserved in developing the Diyagama Technopark. The IT-related enterprises, that invest in the Diyagama Technopark, will be able to utilise the reserved natural vegetation in their plot.







	
Kalu Ganga Athu Oya from Kottawa-Horana Road	Kottawa-Horana Road in the site
	
Road to Homagama	A4 Road
	
North Boundary	East Boundary

Figure 6.4 Photos Showing Present Situation at Diyagama

2) Infrastructure

(i) Road

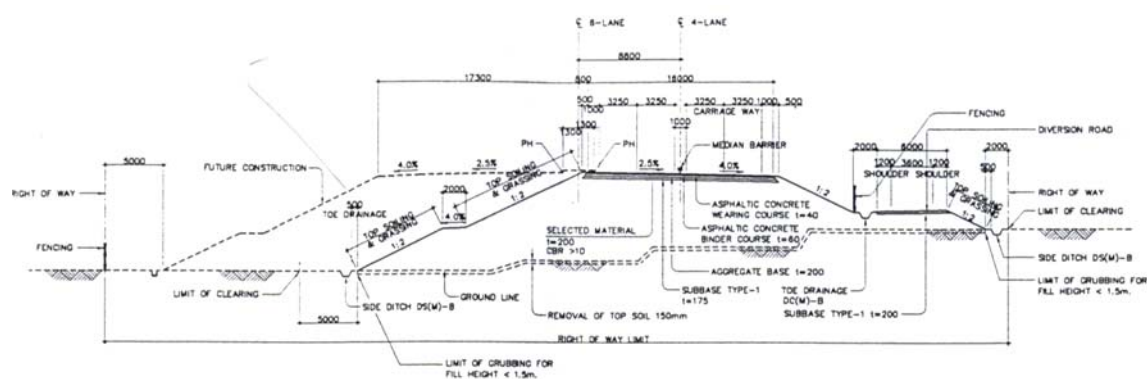
National Road A4, which is the trunk road from Colombo to Avissawella, Ratnapura, and Monaragala, runs to the north of Diyagama, while National Road B5 from Colombo to Horana, runs to the south (2 km apart). The Kottawa-Horana Road runs across the Diyagama site from east to west. The proposed Southern Highway is aligned along the Kalu Ganga Athu Oya, in the western edge of the Diyagama site. The Southern Highway, which will be the first expressway in Sri Lanka, running 128 km from Kottawa to Matara, will connect with the planned Outer Circular Highway at Kottawa. Two highway interchanges are planned, one at Kottawa on the A4 and the other at Kahtuduwa on the B5.

Three provincial roads can be utilized to access the Diyagama Site from existing routes A4 and B5. Improvement of the Kottawa-Horana road will be necessary for development of the Technopark.

Table 6.3 Required Improvement of Existing Roads

Road	Coverage		Remarks
A4 Road	Road widening	13 km (Colombo–Kottawa IC)	RDA
B5 Road	Road widening	17 km (Colombo-Kahatuduwa IC)	RDA
Kottawa-Horana Road	Construction of Overpass of the Southern Highway	Crossing of southern Highway	RDA

(Source) RDA



(Source) RDA

Figure 6.5 Typical Section of Southern Highway

(ii) Port and Airport

Currently, Colombo Port is the sole international seaport for exports and imports. From the Diyagama site, it is accessible via Route A4 (the distance being about 20 km). Access to the Bandaranaike International Airport is along A3 and A4 via Colombo City at present. When the Outer Circular Highway is constructed, the Diyagama Site will be much closer to the airport.

(iii) Power Supply

Power generation and transmission is managed by the Ceylon Electricity Board (CEB). Substations, which provide 132/33 kV step-down, are located in Pannipitiya, Ratmalana, and Pandura. The Horana Substation is under construction. Expansion of the Pannipitiya substation (located 6 km from Diyagama) and construction of a new transmission line will be necessary to serve the Diyagama Technopark.

Table 6.4 Substations in/ around Diyagama

Substation	Capacity	Distance from Diyagama Site	Remarks
Pannipitiya	2 x 250 MVA 2 x 30 MVA 2 x 31.5 MVA	6.5 km	220kV / 132kV 132kV / 33kV 132kV / 33kV 220kV/132kV Transmission line Existing
Ratmalana	3 x 31.5 MVA	13.5 km	132kV / 33kV
Pandura	2 x 31.5 MVA	14 km	132kV / 33kV
Horana	n.a.	11km	132kV / 33kV Under construction

(Source) CEB

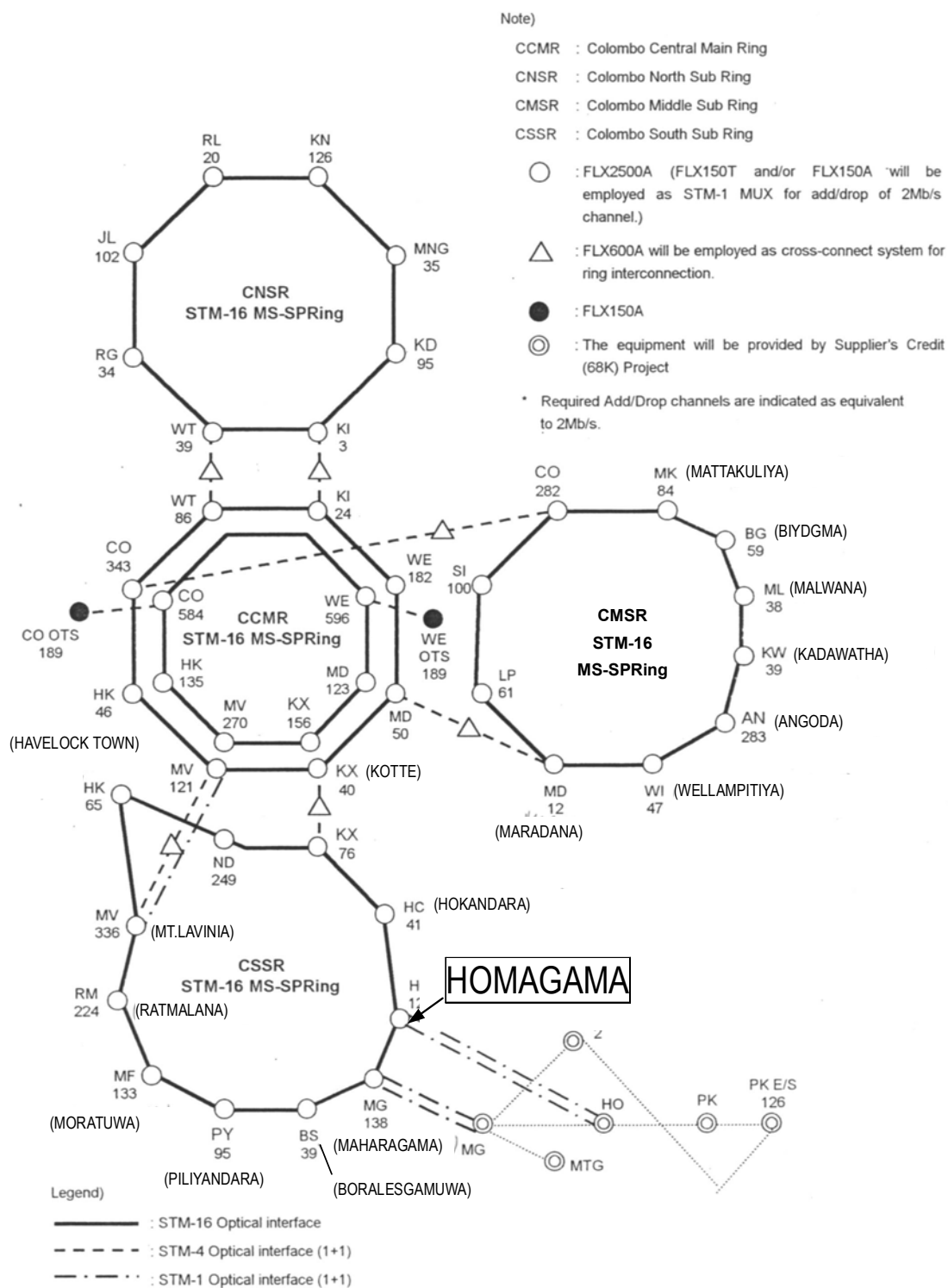
(iv) Telecommunications

The telecommunications system is operated at the private initiatives. The table below shows the current operational conditions of telecommunications in Sri Lanka.

Table 6.5 Open Market Telecommunications in Sri Lanka

Area		Condition	Remarks
Foreign	Voice communication	2002 opening Market	
	Internet Protocol	Already Opened	Voice Over Internet Protocol is prohibited
Domestic	Internet Protocol	Already Opened	
	Voice communication	SLT	

(Source) SLT Interview



(Source) T-net 1

Figure 6.6 Telecommunications Network in Colombo Area

The international telecommunications line connection by submarine cable (called the SMW-2 and SMW-3 Submarine Cable) lands at Mt. Lavinia located 10 km to the south of Colombo, and joins the national telecommunications grid. SLT has just started 90 Mbps Internet protocol services utilizing SMW-3.

For domestic services, a basic optic fiber cable network was constructed in and around Colombo City. The optic fiber cable network is shown in Figure 6.6. The network has enough capacity for the current demand. Four rings have a capacity of STM-16 (2.5Gbps). Homagama Exchanging Station (located 4.5 km from Diyagama) is the nearest contact point on the Colombo South Sub Ring. Extension of the optic fiber cable from the Homagama Exchange Station to the Diyagama site is required.

(v) Water Supply and Drainage

The National Water Supply and Drainage Board (NWDSB) is responsible for the water supply system. The supply-demand balance in the Greater Colombo area is at present so tight that the water supply is limited only to urban areas. Homagama is the only town receiving NWDSB water supply in the vicinity of Diyagama.

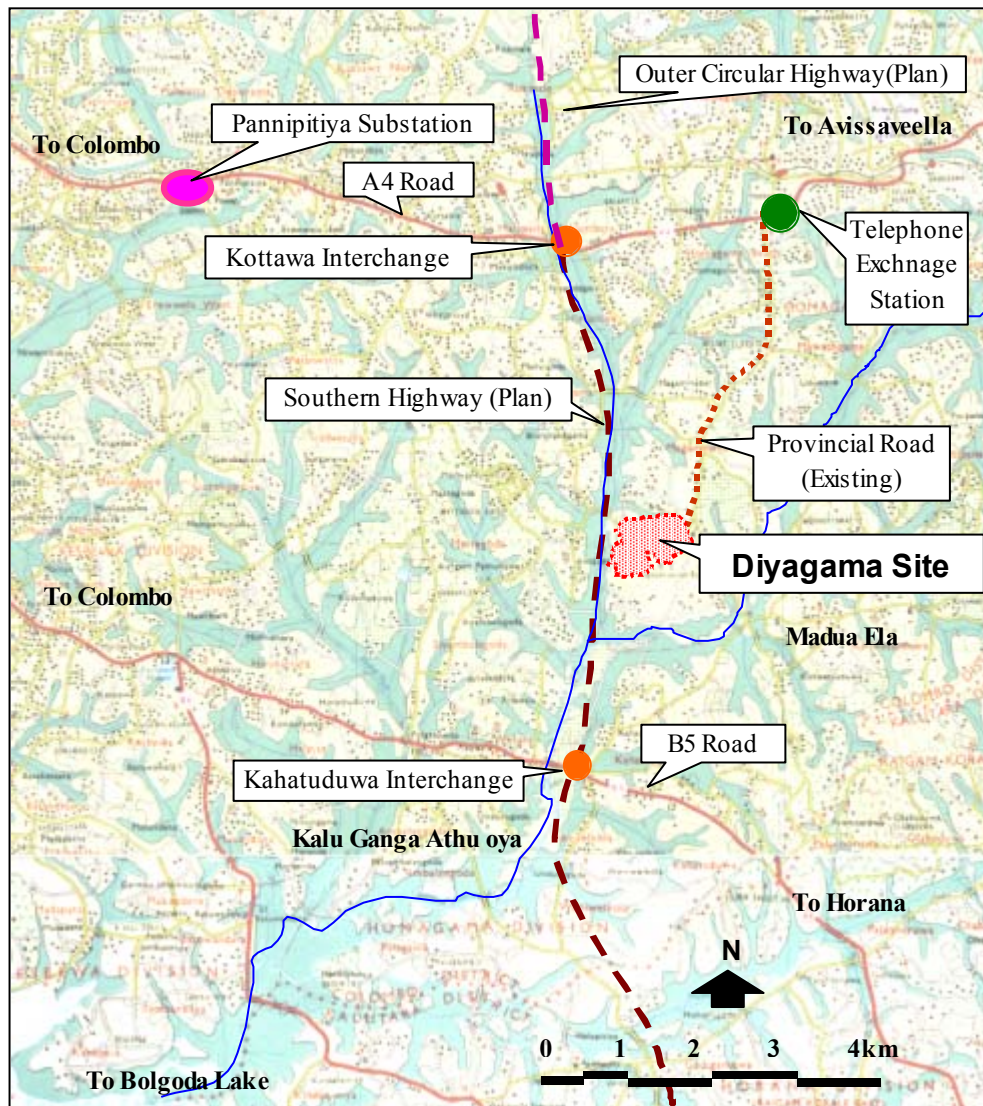
A new water supply project in the southern Greater Colombo area has been planned and is being implemented. The new system will take water from the Kalu Ganga river with a purification plant at Horana (located 8 km from Diyagama). The outline of this new system is summarized in the Table 6.6. In the event that groundwater is not promising at Diyagama, water conveyance from Horana under the Kalu Ganga water project will be required for development of the Diyagama Technopark.

Table 6.6 New Water Supply Development Plan in Greater Colombo

Development Stage		Plant and Pipeline	Estimated completion	Remarks
Phase 1	StagPhase 2e1	Water Intake from Kalu Ganga	2005	63,000 m ³ /day
		Purification Plant at Horana		60,000 m ³ / day
		Horana – South of Colombo along A8 Road		DIP DIA 1,200-800 mm L=20,000 m
	Stage2	Water Intake from Kalu Ganga	2007	63,000 m ³ /day
		Purification Plant Expansion at Horana		60,000 m ³ / day
		Horana – South of Colombo through B6		DIP DIA 1,000 mm L=14,500 m
Phase 2		Water Intake from Kalu Ganga	Not decided	189,000 m ³ /day
		Purification Plant at Horana		180,000 m ³ / day
		Horana – South of Colombo through B5		DIP DIA 1350 mm L=28,500 m

(Source) NWDSB Interview

A summary of the current condition of infrastructure around the Diyagama site is shown in Figure 6.7.



(Source) JICA Study Team

Figure 6.7 Infrastructure around the Diyagama Site