



## International

Asia

### Client

Public Utilities Board

### Location

Republic of Singapore

### Start Date:

1997

### End Date:

2008

## Deep Tunnel Sewerage System (DTSS)/Changi Water Reclamation Plant (CWRP)

### Project Highlights

- CM services for one of the world's largest wastewater collection and treatment project
- Innovative design and IT technologies during construction
- Successful partnering relationships between the design firms
- Complicated project controls
- CM in a tight site environment on a tight schedule

### Project Description

CH2M HILL, in cooperation with local partners, is managing and integrating the planning, design, and construction of the Deep Tunnel Sewerage System (DTSS), which features large conveyance tunnels installed under the island nation. The DTSS will collect wastewater from link sewers in many Singapore catchments and convey it to ultimately one of two compact state-of-the-art treatment plants, one at each end of the island. Treated effluent will be available for reclamation and reuse or discharge through deep sea outfalls into the Straits of Singapore. The system will collect, treat, and discharge all sewage from the island nation, eventually replacing more than 134 existing pump stations and six secondary treatment plants with individual outfall systems.

CH2M HILL is the prime consultant for design and construction management of the CWRP program for the Public Utilities Board of the Republic of Singapore. CH2M HILL-PB (Parsons-Brinkerhoff) are prime consultants for the entire DTSS program and are lead consultants for the design and CM of the tunnel portion of the program. CH2M HILL provided the predesign and is currently managing and performing final design, tender evaluation, construction engineering, management, inspection, and startup services for the Changi Water Reclamation Plant, the first of the two treatment plants. This project involved complicated project controls, CM in a tight site environment, and a tight schedule.

The Changi Water Reclamation Plant, scheduled to be commissioned in 2008, has an initial capacity of 800,000 cubic meters per day (CMD). This plant can be enlarged in subsequent phases to provide a final capacity of 2.4 million CMD. The Jurong Island Water Reclamation Plant, the second treatment plant, is scheduled for commissioning in 2015 and will also have an initial capacity of 800,000 CMD. This plant will have a final capacity of 1.8 million CMD.

The deep tunnel system comprises 90 kilometers of deep tunnels constructed under design-build contracts; only 48 kilometres are being built in Phase 1.