

Raw Water Transmission Lines from Helwan to New Capital

Client

New Urban Communities Authority (NUCA)

Scope of Work

Schematic Design
Detailed Design
Construction Supervision

Location

Cairo, Egypt

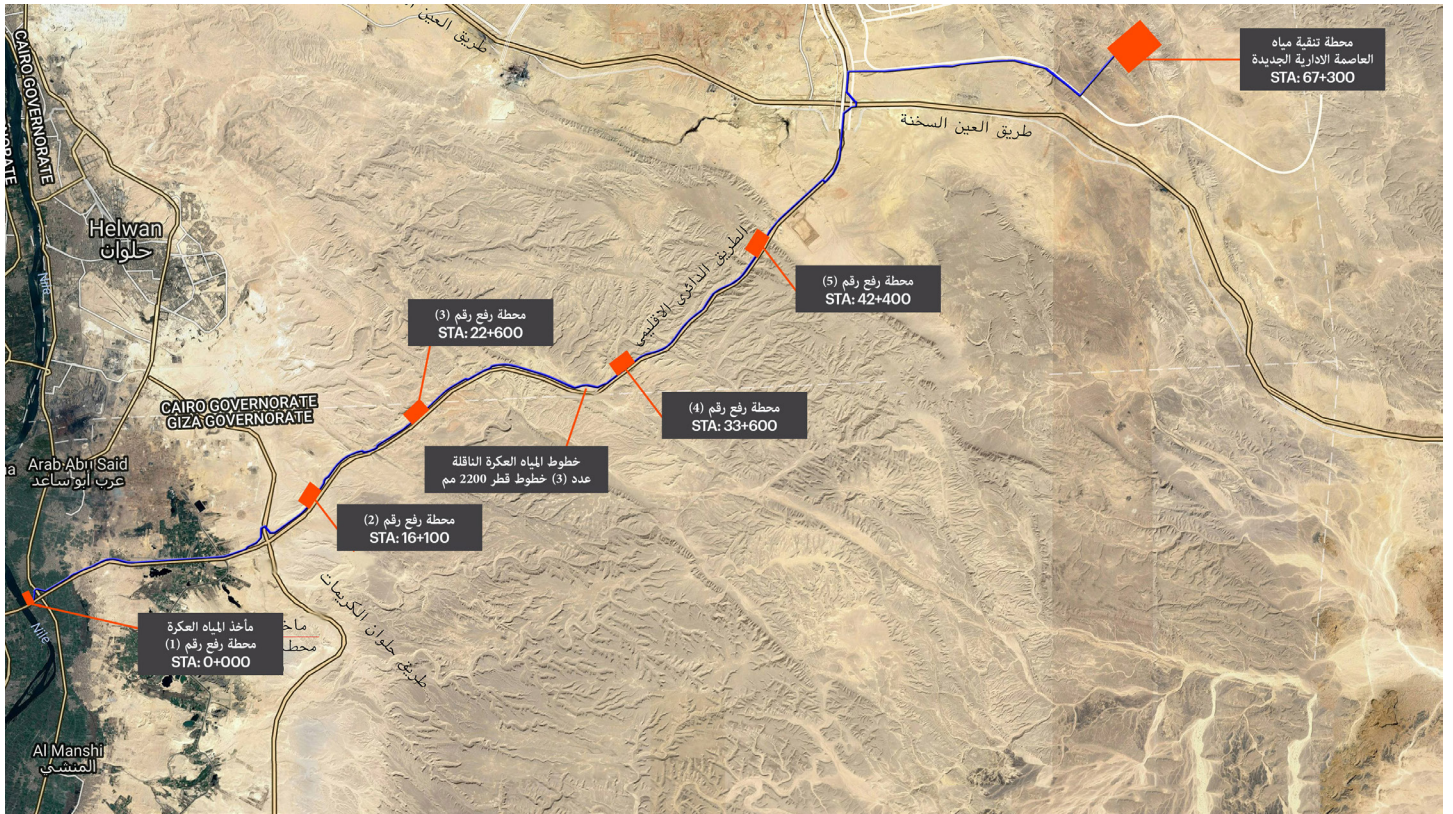
Types of Activities

Civil
Electrical
Instrumentation & Control
Mechanical
Structural

The project aims to transfer raw water (1.5 million m³/day) from the new water intake at the River Nile bank in South Helwan to the Water Treatment Plant in the New Capital. It comprises the following components:

- Intake: to carry raw water via three pipelines (each 50 km long) from an intake booster pump station that includes pump house, electrical substation, transformer, generator, and service buildings.
 - Three Transmission Pipelines: each with a diameter of 2,200 mm and length of 50 km.
 - Booster-Pump Station (4 pumps): The station has a capacity of 800,000 m³/day in Phase 1 and total capacity of 1.5 million m³/day at the end of Phase 2
- and comprises underground water tanks (240,000 m³), pump house, electrical substation, transformer, and a generator; in addition to service buildings (mosque, administration building, store, and workshop).
- A Water Treatment Plant (1.5 million m³/day): Raw water is treated on four stages, each with a capacity of 400,000 m³/day. ECG scope of works includes construction supervision services in addition to civil works for the fences and service & administrative buildings.





ECG scope in terms of piping works covers hydraulic calculations, hydraulic profile, study of hydraulic balance of the pipeline, strategic ground tanks, and transmission pipelines & crossing with canals, drains & roads. Additionally, water hammer analysis is administered to protect the pipeline from hammer impact.

ECG scope in terms of booster-pump station works covers hydraulic calculations, plant layout, piping & instrumentation diagram (P&ID), and plant mechanical general arrangements.