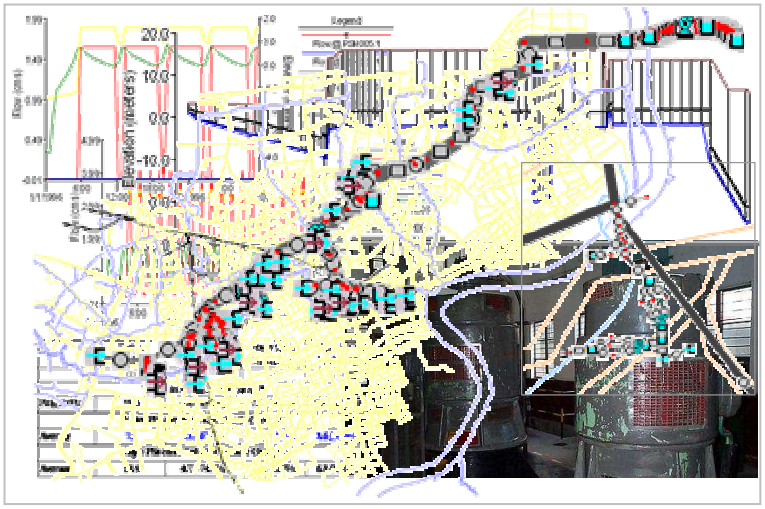
Project Name:
Design and Operation Optimization based on Computer Modeling for Shanghai Sewerage Phase 1 System

Client:
Shanghai Municipal Sewerage Company

Project Duration:
1998 - 2000

Project Cost:
$200 Million

A computer model has been developed for Shanghai Sewerage Phase 1 project to evaluate and optimize the existing operational strategies. The model includes the entire main conveyor of SSP1, the major collection pumping stations and the pipe connections between the main conveyor and the all of 48 collection pumping stations.



SSPI modeling, results, implications of operational strategies on:

- Flooding
- Pump operation
- Energy consumption
- Efficiency of drainage
- Sewer system maintenance
- Negative environmental impacts
- Combined sewer overflow (CSO) control

Key Driving Forces

Power consumption at two major lift PS's of SSP1 is about 30,000,000 kW for dry weather days in each year.
Power consumption for all of 48 collection P.S. is in similar range.
SSPI main conveyor plus collection system has very large storage capacity that could be used to reduce street flooding and CSO's into Suzhou Creek.

Project Objectives

Establish an information system for SSP1 main conveyor and the sewerage collection system;
Reduce power consumption of the 48 collection PS's and main lift PS;
Reduce flooding on streets;
Reduce CSO's into waterways; and
Evaluate existing system and present a cost-effective alternative for SSP1 improvement