Present Situation of Lake Kasumigaura Water Resources Management Project

Present Management

Ten years have lapsed since management of the Lake Kasumigaura Water Resources Management Project started in April of 1996. The Management Project contains the operation and management of dikes, gates and sluices as well as water supply to Ibaraki Prefecture, Tokyo and Chiba Prefecture. After10 years operation, there are the following problem of the project.

1. Problem of Lake Management

The Project Problems as follow;

(1) Water level control

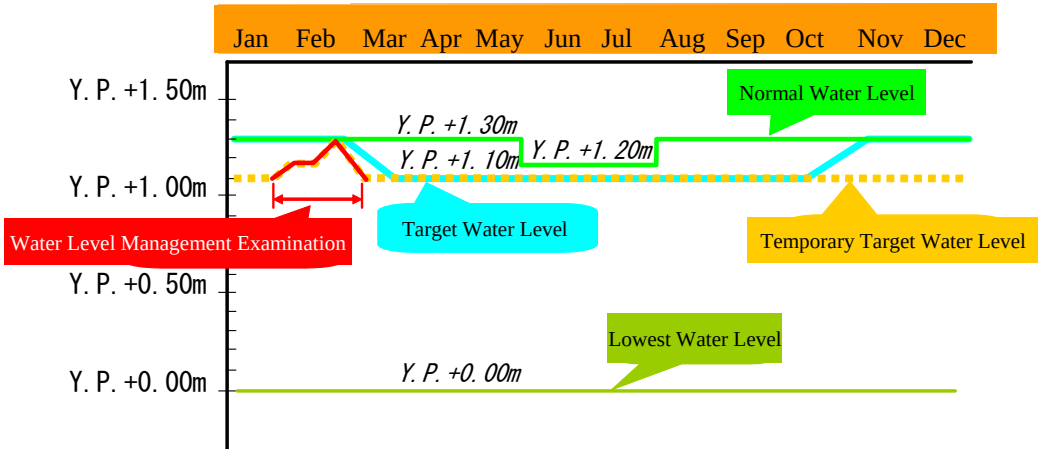
Vegetation Shoreline area around the lake had been decreased since the O&M was shifted in 1996, targeted water level has been redesigned at Y.P.+1.10m for the all year on the temporary basis since 2000 as emergency measures and monitoring lake environment in terms of vegetation.

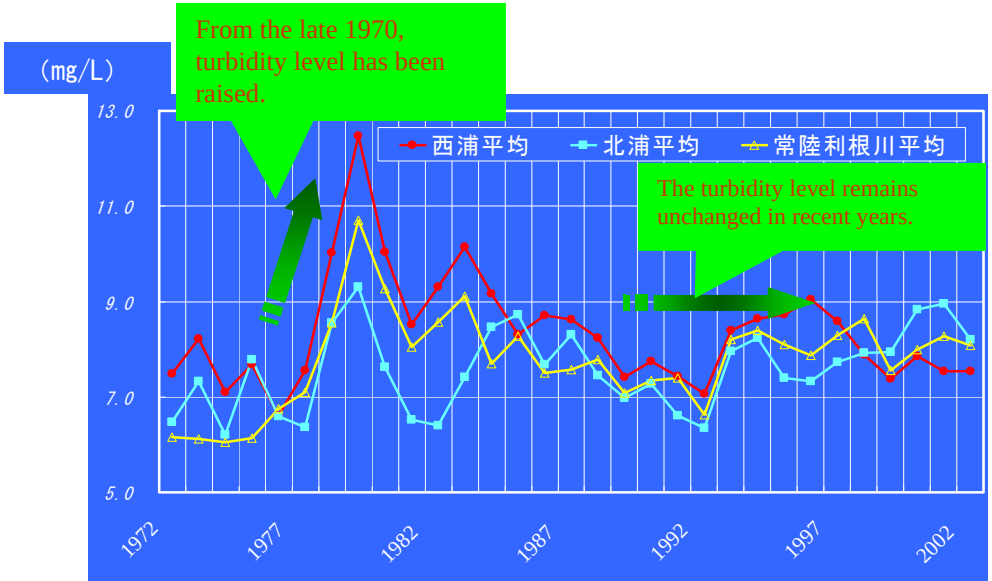
From 2004, operational test to control water level has been conducted in searching for an effective way for water use together with preservation of environment.

(2) Water quality of Lake Kasumigaura

There is a tendency that the COD, T-N level containing water of the Lake Kasumigaura remains unchanged and that T-P level has been increased. The degree of transparency in water is low these days and the water quality contained with white turbidity become serious.

Water Level Control





2. Rehabilitation Plan needed for enormous cost

There are a number of facilities which needs to be improved and repaired after the 10 years operation and management of the facilities. The enormous cost is required for the following facilities:

(1) Repairing and painting works of gate at Shin-Tone River Estuary Lock Station

Repairing: Commencement Period: 2006-2012 Cost:181.7 million yen. Previous work completed in 1985 (21 years as of 2006). Gates: 5 water gates and 5 pump houses

Painting: Commencement Period: 2006-2012 Cost:59,7 million yen. Previous work completed in 1994 (12 years as of 2006). Gates:5 water gates and 5 pump houses


Panoramic view of Shin-Tone River Estuary Lock Station


Base coat is exposed to the surface

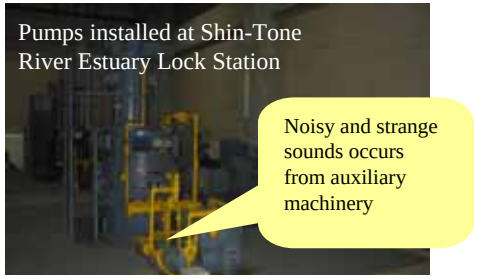

Watertight rubber is worn out

Type of Work	Rehabilitation plan (Unit: 1,000JPY)						
	2006	2007	2008	2009	2010	2011	2012
Repairing gates at Shin-Tone River Estuary Lock Station	35,700	29,500	29,500	20,000	20,000	34,000	13,000
Painting gates at Shin-Tone River Estuary Lock Station	13,200	12,000	12,000	4,000	4,000	6,500	8,000

(2) Repairing works of pumps at Shin-Tone River Estuary Lock Station and Shin-Yokotone Lockgate Station

Repairing period at Shin-Tone Lockgate:2006-2009 Cost::92.3 million yen Previous repairing work completed in 1988 (17 years as of 2006) Pump:3units

Repairing period at Shin-Tone Lockgate:2006-2009 Cost:113 million yen Previous repairing work completed in 1988 (17 years as of 2006) Pump:3units

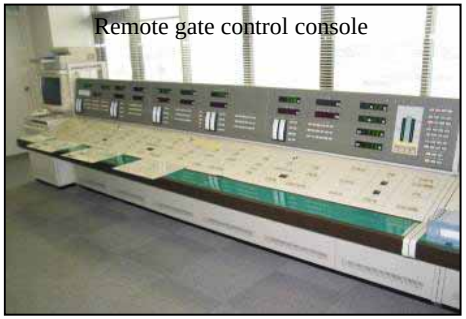


Type of Work	Rehabilitation plan (Unit: 1,000JPY)			
	2006	2007	2008	2009
Repairing pumps of Shin-Tone River Estuary Lock Station	30,000	30,000	27,300	5,000
Repairing pumps of Shin-Yokotone Lockgate Station	58,000	25,000	25,000	5,000

(3) Upgrading operation equipment Shin-Tone River Estuary Lock Station

Commencement period of upgrading work:2008-2009 cost:210 million yen　Previous upgrading work competed in 1994 (12 years as of 2006)

Printed circuit board has breakdown



Type of Work	Rehabilitation plan (Unit: 1,000JPY)	
	2008	2009
Repairing operation equipment of Shin-Tone Pump House	82,000	128,000

(4) Upgrading Water Management Data Processing Equipment

Commencement period of improvement work:2007-2008 cost:211 million yen　Previous upgrading work completed in 1993 (13 years as of 2006)

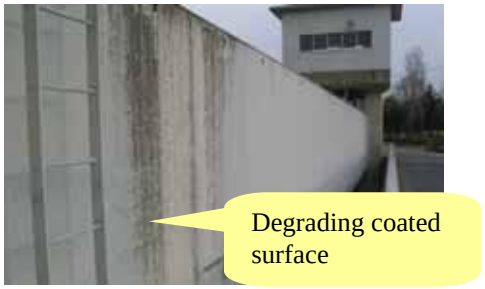
Printed circuit board, hard disk and printer has breakdown

Type of Work	Rehabilitation plan (Unit: 1,000JPY)	
	2007	2008
Upgrading Water Management Data Processing Equipment	44,000	77,000

3. Extra works to be implemented when budget allocation is available

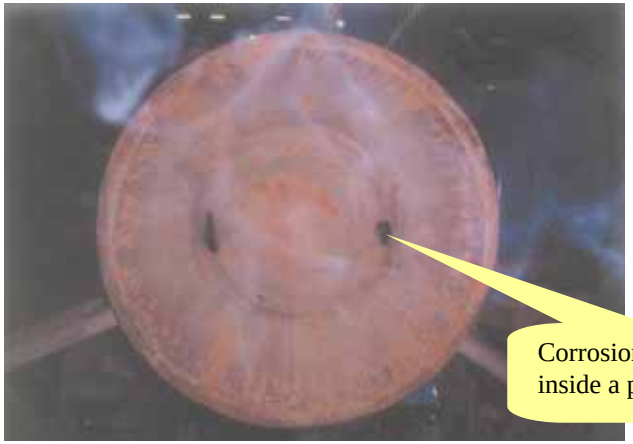
The following works will be implemented when budget allocation is available.

Coating and improving gates



The work numbers of coating and improving gates are restricted based on the standardized budget allocation and these works are scheduled to be completed in several years, however, deterioration of facilities (shown above) become serious and need immediate works.

Unexpected repairing works and other works



For some unexpected repairing works which requires swift improvement, surplus budget will be allocated to those such as deficit parts which was not found during a routine inspection but found during an attempt to disassemble pump, equipment failures during the operation and management and damaged and degraded facilities..

Corrosion parts were found during Repairing works of pump in 2005