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Japan River Restoration Network

Sumida River, JAPAN

Akira WADA
Japan River Restoration Network

Panel on Urban Water/River Front Redevelopment
World Bank Tokyo Office –May 30th, 2011

The Sumida River - Representative River in Tokyo

River Length:23.5km, Area: 690km², Population: 3 milli.
Operating Body: Tokyo Metropolitan Government
The entire river is a tidal river, which is influenced by tides.

Sensoji Temple

Tokyo Sky Tree
(634m, 2012 open)

Tsukiji Market

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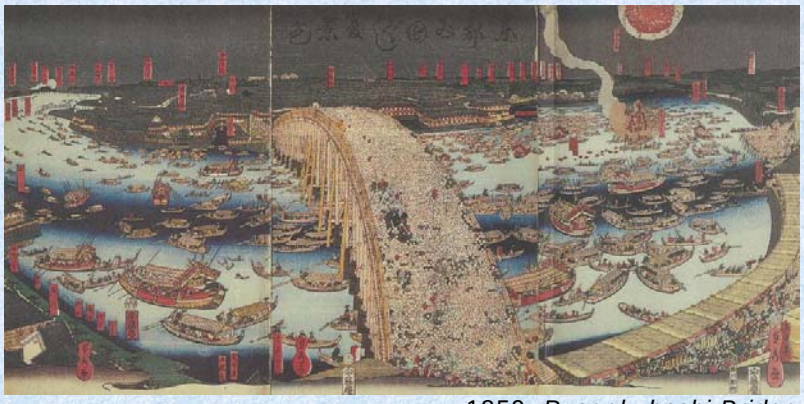
Source: *"River Rehabilitation with a focus on the Sumida River"*
ARRN's 4th International Forum on Waterfront and Watershed Restoration (Nov. 2007)
http://www.a-rr.net/jp/en/news/jrrn_event/2045.html

Background of Sumida River Restoration

Prior condition in 1800s

In the Edo period (1603-1868), as the city developed, a waterfront was developed in the Sumida River and many people gathered for boating and fireworks.



1859, *Ryogokubashi Bridge*

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Source: *"A birds-eye view of the crowds gathered in the vicinity of Ryogokubashi Bridge for a fireworks display" by Hashimoto Sadahide, 1859*

Background of Sumida River Restoration

Summary of Historical condition and countermeasures

Year	Water Quality	Flooding / Land use
1900	(Water quality deterioration)	Arakawa Diversion channel (High tide disaster)
1920	Sewer regulations	(factories/warehouses developed)
		Arakawa Diversion channel completion
1940	(Worst Water quality)	(Typhoon Kitty)
1960	New sewer law Developing sewer systems	High tide levees construction (Typhoon Kanogawa) (Worst Ground Subsidence by water use)
	(Sewer connection rate 50%) (Environmental standard achieved)	Groundwater use regulation (Typhoon No.20)
1980	(Revival of Fireworks/Regatta)	Gently sloping levees construction River terraces construction
2000	(Sewer connection rate 100%)	Waterfront master plan for improving attractiveness

(Main Target)

Water quality, Flood control

Landscape, Amenities

Ecology, Human, Community

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Background of Sumida River Restoration

Water quality in 1900s

Due to an increase in population and factories along the river, the water quality deteriorated. In particular, in the period of high economic growth (1950 to 1960s), BOD reached 40mg/l, the deterioration of the river environment reached a peak, and a bad smell drifted into surrounding areas.

1967

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Background of Sumida River Restoration

Flooding in 1900s

Floods hit lowlands frequently in 1900s.

1958, Koto Ward(Typhoon Kanogawa)

1910, *Sensoji Temple*

1949, Hirai Station(Typhoon Kitty)

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Background of Sumida River Restoration

Land use & Landscape in 1900s

Many factories and warehouses were located along the Sumida River. In late 1900s, levees were constructed to protect the capital city from tidal waves. Because linear levees separated local residents from the waterfront, the landscape that had long been loved by people and the bustle of the waterfront were lost.

Ookawabata Area

Shinkawa Area

Azumabashi Area

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Source: *"River Rehabilitation with a focus on the Sumida River" ARRN's 4th International Forum on Waterfront and Watershed Restoration (Nov. 2007)*
http://www.a-rr.net/jp/en/news/jrrn_event/2045.html

Efforts for Sumida River Restoration

Water quality improvement

Various measures were taken to improve water quality. For example, a sewage system was reconstructed in the basin (diffusion rate increased from 10% in 1961 to 100% in 1995); regulations on plant effluent were tightened; and water was drawn from the Tone River to purify river water.

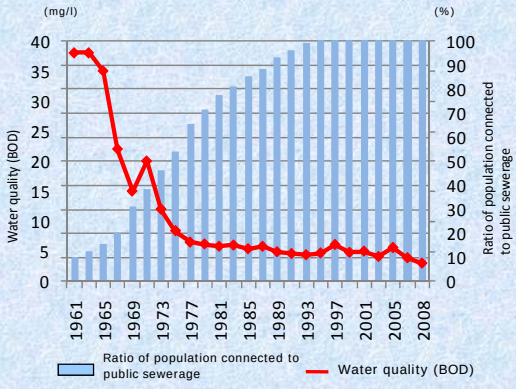
COUNTERMEASURES

-Construction of sewers

-Waste water regulation against factories

-Removal of polluted mud by dredging

- Water transmission from the Tone River



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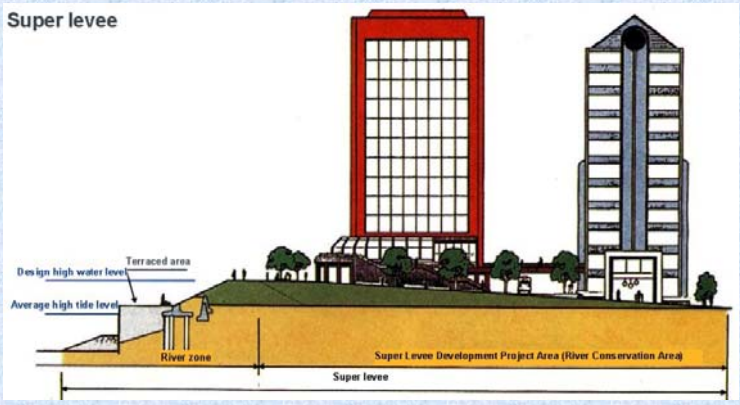
Source: *ARRN's "Reference Guideline for Restoration by Eco-Compatible Approach in River Basin ver.1 Separate Volume" (Jan. 2011)*
http://www.a-rr.net/jp/info/letter/docs/ARRNguideline1-separatevol.pdf

Efforts for Sumida River Restoration

Waterfront amenity improvement coexisted with flood prevention

Gently sloping levees and high standard levees were constructed as substitutes for linear levees to increase durability. At the same time, river edge terraces (promenades) were improved and levees were forested to improve water amenities.



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Efforts for Sumida River Restoration

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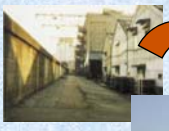
Ookawabata Area



Shinkawa Area

Azumabashi Area

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Efforts for Sumida River Restoration

Regional activation by tourism, festival etc.

Water-bus shuttle

Student's participation

Open cafe

Cherry Blossom Festival

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Current situation and Future prospects

In 1978, the BOD of the Sumida River reached 7.4mg/l, and it has remained stable to meet environmental standards since then. With the improvement of the sewage system and activities of citizens' groups, water quality was significantly improved. This led to the recovery of fish, aquatic birds, and aquatic plants along the shore.

Signboard about fish, birds and BOD/COD

Biotope

Cleanup activity by citizens' group

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Current situation and Future prospects

As the bad smell was gone and water amenity space was improved, the waterfront of the Sumida River attracted many people again. Fireworks and boat races, which had been suspended for a while, have now been restored. The river has become popular among tourists from inside and outside the region with more sightseeing boat services offered.

Tourist information

Renewed water-bus station at Asakusa (2010)

Revival of Fireworks Festival /Regatta

Tokyo Sky Tree (2012 open)

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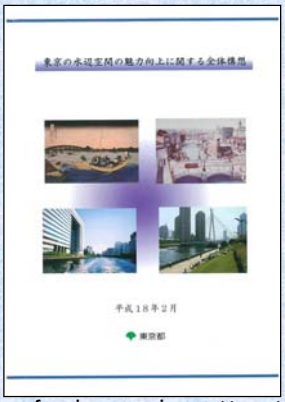
Current situation and Future prospects

The Tokyo Metropolitan Government plans more improvement, positioning increased attractiveness of waterfront areas including the Sumida River as an important pillar of its future urban strategies.



Master plan for improving attractiveness of waterfronts in Tokyo(2006)
http://www.kanko.metro.tokyo.jp/administration/gyosei/pdf/mizube_full_02.pdf

Tokyo's Big Change "The 10-Year Plan"(2006)
http://www.metro.tokyo.jp/ENGLISH/PLAN/index.htm

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Current situation and Future prospects

In the “Tokyo's Big Change: The 10-Year Plan” formulated in 2006, “Restore Tokyo’s beauty as a city of water and greenery” is placed as one of eight goals.

“Action Program 2011 for the 10-Year Plan” **(formulated Dec. 2010)**

<Goal-6>
Establishment of Tokyo’s presence with a charm and industry power of the city
<Policy-19>
Renaissance of "capital Tokyo of the water" beginning in the Sumida River

Goal:
-Rousing interest of waterfront by event and water transportation
-Completion of waterfront terrace of the Azumabashi Bridge down stream

Strategy:
-Restore local activity by event
-Environmental creation to feel river wind
-Formation of a rich waterfront scene
-Access improvement with the bank

Budget(3-year 2011-13):
-2.1 billion yen(26 million US$)

http://www.chijihon.metro.tokyo.jp/plan2011/plan2011index.html

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Thank you for your kind attention.

http://www.a-rr.net/jp/en/

Japan River Restoration Network secretariat

Foundation for Riverfront Improvement and Restoration (RFC)
7th Floor, 1-17-24 Shinkawa, Chuo-ku, Tokyo, JAPAN, 104-0033
TEL: +81-3-6228-3860 FAX: +81-3-3523-0640
E-mail: info@a-rr.net Website: http://www.a-rr.net/jp/

Japan River Restoration Network (JRRN) is operated by ***Foundation for Riverfront Improvement and Restoration*** and ***CTI Engineering Co., Ltd.*** as joint study on development of Asian River Restoration network.