The East River Tidal Barrage

The East River Tidal Barrage is a concept for a structure spanning the East River to serve three purposes: to reduce pollution in New York's waterways, to provide a new traffic crossing, and to generate electricity.

Although virtually all of New York's wastewater now receives secondary sewage treatment, New York's waterways continue to suffer from the effects of high nutrient levels. Sixty percent of New York City's treated wastewater enters the East River. The East River, extending from the Battery to Throgs Neck, is actually not a river in the strict sense, but a tidal strait. The tidal excursion during each tidal cycle is about 70 percent of the length of the river, so that it is never completely flushed by the tides before they reverse.

Tide gates in the river would permit the tides to flush water toward New York Harbor but prevent tidal movement into Long Island Sound. Clean oceanic water would be drawn through the eastern mouth of Long Island Sound. Within a few months, according to model calculations, the water quality in Long Island Sound would be close to the purity of the open ocean. Flushing with this clean water would reduce the level of pollution in New York Harbor by about half, and cleaner water would enter New York Bight through the Narrows.

The piers spanning the river to support the tide gates could also serve as a foundation for a river crossing for road, rail, or pedestrian traffic. The most suitable place for this crossing needs to be established. Underwater turbines can be housed in the river barrage to generate electricity when the tide is flowing.
Announcing...

The East River Tidal Barrage
A Symposium on a Multipurpose Addition to New York City's Infrastructure

We are pleased to invite you to attend an all-day symposium to introduce the concept of the East River Tidal Barrage, and to examine its ramifications.

SYMPOSIUM PROGRAM
Thursday, 29 April 1993, 8:00am-5:00pm
C.P. Davis Alumni Auditorium, Room 412 (campus level)
Morris A. Schapiro Center for Engineering and Physical Science Research
Columbia University, 530 West 120th Street and Amsterdam Avenue, NYC

8:00 AM  Reception and Coffee
8:45  Welcome
Dr. Victor Wark, Former Vice President, Engineering Sciences
The New York Academy of Sciences

8:50  Why a Tidal Barrage?
Dr. Douglas Hill
Douglas Hill, P.E., P.C.

9:00  TIDE GATES AND THE ESTUARINE ENVIRONMENT
Session Chair: Dr. R.L. Swanson
Director, Waste Management Institute
Marine Sciences Research Center
State University of New York at Stony Brook

Tide Gates and Their Effect on Water Quality
Prof. Malcolm J. Bowman
Marine Sciences Research Center
State University of New York at Stony Brook

Hydrodynamic and Water Quality Impacts of the Proposed East River Tidal Barrage
John P. St. John, P.E.
Principal Engineer, HydroQual, Inc.

9:45  Coffee Break

10:00  Effect of Tide Gates on Sediment Transport
Prof. Henry Bokuniewicz
Marine Sciences Research Center
State University of New York at Stony Brook

10:15  Effects of Tide Gates on the Fish Community
Prof. Peter Woodhead
Marine Sciences Research Center
State University of New York at Stony Brook

12:00  Luncheon: President’s Room, Faculty House

12:45  ANOTHER EAST RIVER CROSSING?
Luncheon Speaker: Dr. Lucius J. Riccio
Commissioner
New York City Department of Transportation

CONCEPTUAL DESIGNS OF THE EAST RIVER TIDAL BARRAGE
Session Chair: Prof. F. H. (“Bud”) Griffis
Department of Civil Engineering, Columbia University

Michael Abrahams, P.E.
Structures Department Manager
Parsons Brinckerhoff Quade & Douglas

Lyle H. Hixenbaugh, P.E., Corporate Vice President
John J. Szeliowski, Assistant Vice President
TAMS Consultants, Inc.

3:00  Coffee Break

3:15  COMMENTARY
Session Chair: Prof. Christian Meyer
Department of Civil Engineering, Columbia University

Infrastructure As Public Place
Prof. Anthony C. Webster
Graduate School of Architecture, Columbia University

Prospects of Tidal Electricity Generation
George Birman, P.E.
Consulting Engineer

Permitting the East River Tidal Barrage
Representative, New York District
U.S. Army Corps of Engineers

3:45  SUMMARY OF THE SYMPOSIUM
Prof. Donald F. Squires
Marine Sciences Institute
The University of Connecticut

4:20  Discussion

4:40  Luncheon: President’s Room, Faculty House

5:00  Adjourn

Sponsors: American Society of Civil Engineers, Metropolitan Section, Infrastructure Group
The New York Academy of Sciences, Engineering Section
The State University of New York at Stony Brook, Marine Sciences Research Center
Columbia University, Department of Civil Engineering, Infrastructure Institute

Rapporteurs:
- Edward O. Wagner, P.E.
  Deputy Commissioner, NYCDEP
  Director, Bureau of Clean Water
- Bruce Bergmann
  Chief of Planning,
  New York District U.S. Army Corps of Engineers
- John J. P. St. John, P.E.
  Former President, AAPA
  University of Connecticut
- Henry Bokuniewicz
  Professor, New York University
  Department of Civil Engineering
- Peter Woodhead
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