

A.

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.

Columbia University
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Q.

What is it that would...

- ◆ Reduce pollution in New York City's waterways by half?
- ◆ Provide another East River crossing?
- ◆ Generate its own electricity without fuel?

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 Wouk, 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.

10:00 Coffee Break

10:15 Effect of Tide Gates on Sediment Transport

Prof. Henry Bokuniewicz
Marine Sciences Research Center
State University of New York at Stony Brook

Effects of Tide Gates on the Fish Community

Prof. Peter Woodhead
Marine Sciences Research Center
State University of New York at Stony Brook

Rapporteurs:

• Prof. M. L. Thatcher
Department of Civil Engineering, Columbia University

- 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

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

1:45

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. Szeligowski, Assistant Vice President
TAMS Consultants, Inc.

2:45

Coffee Break

3:00

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

Some Initial Thoughts from the Environmental Community

Timothy Searchinger, Esq.
Environmental Defense Fund

4:20

Discussion

4:40

SUMMARY OF THE SYMPOSIUM

Prof. Donald F. Squires
Marine Sciences Institute
The University of Connecticut

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

Please make reservations by writing to:

ERTB SYMPOSIUM
Department of Civil Engineering
610 S.W. Mudd Building
Columbia University, New York, NY 10027-6699

Attendance Fees:

Preregistration (until April 22nd) - \$90 (includes luncheon)

Full-time Students - \$15 (does not include luncheon)

Name: _____ Affiliation: _____

Title _____ Phone: _____ Fax: _____

Address _____ City: _____ State _____ ZIP _____

Preregistration is required.

Please make check payable to ASCE - Metropolitan Section and enclose with this reservation card.

Please check here if you need parking information _____.

For further information, please phone or fax Dr. Douglas Hill, 516-421-2999.