



# The Tidal Exchange

Newsletter of the New York ~ New Jersey Harbor Estuary Program

Summer 2002

## THIS ISSUE

### HARBOR ESTUARY NEWS

#### CONTENTS

1

*Setting Targets & Goals*  
Bob Nyman

3

*News from the CARP*  
W. Scott Douglas

4

*Mini-grants are Back!*  
Laura Bartovics

Alley Pond Environmental Center - 4

Hackensack Riverkeeper - 5

Mariners Marsh Conservancy - 4

Metropolitan Watershed - 4

New Jersey Audubon Society - 7

New Jersey Project WET - 7

Orangetown Historical Museum  
and Archives - 5

Passaic River Coalition - 7

Randall's Island  
Sports Foundation - 7

The River Project - 8

Wildlife Conservation Society's  
New York Aquarium - 5

8

*The Faces of the  
Harbor Estuary Program*

## Setting Targets & Goals

Bob Nyman

Henry Hudson wouldn't recognize this place. The area that he sailed into almost 400 years ago, now referred to as the New York - New Jersey Harbor Estuary, has been transformed. Indeed, millions of people are proud to live and work here, but gone are most of the forests and wetlands that once lined the shores in the Harbor area. In their place is a teaming metropolis, and all that goes with it.

The environmental quality of the Harbor Estuary has seen many changes over the centuries. Our local waters were at one time pristine and filled with life and, at another, choked with pollutants, floating

debris and sewage. Now, since the passage and implementation of key environmental legislation, such as the Clean Water Act of 1972, we have seen a dramatic upswing in the water quality of the estuary. The Harbor Estuary Program is dedicated to continuing this trend.

Since completing its Comprehensive Conservation and Management Plan (CCMP) in 1996, much has been accomplished by the NY-NJ Harbor Estuary Program (HEP) and its partners. The HEP Citizens Advisory and Science & Technical Advisory Committees outlined many of these

(continued on page 2)



Habitat restoration projects, such as the one at Gerritsen Creek on Jamaica Bay pictured above, are an important part of the Harbor Estuary Program's Targets and Goals effort.



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### The Tidal Exchange Summer 2002

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*The Tidal Exchange* is a publication of the New York – New Jersey Harbor Estuary Program (HEP), a partnership of federal, state and local governments, scientists and citizens working together to protect and restore the natural resources of the estuary. The purpose of the newsletter is to promote an informative dialog on issues related to the Harbor Estuary Program.

The HEP is sponsored by the States of New York and New Jersey and the US Environmental Protection Agency. The HEP Management Committee consists of representatives from the US EPA, NJ DEP, NYS DEC, NY and NJ local governments, US ACE, US DOI, NOAA, Port Authority of NY & NJ, Interstate Environmental Commission, NJ Harbor Dischargers Group, NYS DOS, Science & Technical Advisory Committee and Citizens Advisory Committee.

The Tidal Exchange is produced and printed by New York Sea Grant (NYSG) under a cooperative agreement with the US EPA (#CE982247-00). The viewpoints expressed here do not necessarily represent those of NYSG, US EPA or the HEP Management Committee, nor does mention of trade names, commercial products or causes constitute endorsement or recommendation for use.

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## Setting Targets & Goals

(from page 1)

accomplishments, as well as challenges for the future, in a publication entitled, “Successes and Challenges.” That report, along with a series of public meetings in 2001, has captured the attention of managers at agencies participating in HEP.

Following the example of the Chesapeake Bay Program, one of the largest and most publicly recognized estuary restoration efforts in the country, the HEP Policy Committee has charged the program with setting measurable goals that it can strive to achieve. The goals, including numerical targets, will be tied to a multi-year work plan and progress toward meeting them will be reviewed publicly each year. These numerical targets and goals are being developed to focus the future efforts of the Harbor Estuary Program. They are not intended to replace the CCMP, but rather to aid implementation of the plan.

HEP is also working to coordinate some of its efforts with neighboring estuary programs - the Long Island Sound Study and the Hudson River Estuary Program. Because these systems are fundamentally interconnected, working together to achieve the goals is a necessity. This includes identifying the required resources and ensuring that we are trying to achieve consistent results on a consistent timeline.

While the HEP Targets and Goals document is still in draft form, we would like to provide an update on how the process is going. We have organized our goals into categories we have found to be of most interest to the citizens of the region. These are: Fishing and Swimming, Habitat and Ecological Health, Public Access, Clean Sediment and Navigation, and Stewardship. Within each of these

categories are an overall goal and a list of numeric targets. Under each target is a set of items that could be included in the multi-year work plan.

An example of an overall goal may be something like, “*By the end of this decade, the water quality of the Harbor will make it possible to eat more and more healthy fish caught here.*” A target under this goal might be, “*By 2009, reduce by one-third from 2001 baseline levels, loadings of HEP Contaminants of Concern.*” A work plan item under that target might be, “*By 2002, the top ten facilities with releases of toxics to the estuary will be identified through the Toxics Release Inventory (TRI) and by 2003, commitments to establish voluntary reductions will be set.*”

Bill Matuszeski, the former director of the Chesapeake Bay Program, has been retained to apply his experience to help the HEP develop its Targets and Goals document. HEP work groups and advisory committees provided initial input on the targets and goals and the Management Committee is refining the draft document in sessions facilitated by Mr. Matuszeski. The Policy Committee will review the targets and goals and make final recommendations. The Citizens Advisory Committee, represented on both the Management and Policy committees, provides an avenue for the public to contribute to the outcome.

While there are currently dozens of items listed in the document, it is possible that there could be significant changes before it is finalized; so stay tuned for future updates. If all goes as planned, the targets and goals will be approved this fall and the efforts to achieve them, including locating the necessary resources, can be accelerated. ❖

**Bob Nyman** (US EPA) is the Director of the Harbor Estuary Program.

# News from the CARP

W. Scott Douglas



New York - New Jersey Harbor is arguably one of the most complex, most contaminated, but least understood estuarine systems in the United States. As part of a comprehensive effort to better understand the nature and extent of sediment contamination in the estuary, the Harbor Estuary Program has developed the Contamination Assessment and Reduction Project, better known as CARP. The States of New Jersey and New York, Port Authority of NY and NJ, US Army Corps of Engineers, US Environmental Protection Agency, Hudson River Foundation, and other agencies have joined together to implement a systematic state-of-the-science sampling and data analysis program. To date, the CARP has received funding in excess of \$30 million, the lion's share of which was contributed by the Port Authority of NY and NJ, through the States of New York and New Jersey.

The main objectives of the CARP arise from current problems associated with the management of contaminated dredged material in the estuary and the development of solutions to reduce this contamination in the future. Two main questions drive the CARP:

- *What is the relative importance of specific loadings (discharges) of toxic contaminants to the quality of dredged material in the harbor today?*
- *What management actions to reduce contamination will produce the greatest overall benefits, both in time and areal extent?*

In order to begin finding answers to these questions, the CARP has

initiated one of the most ambitious water, sediment and biota (plant and animal) monitoring programs ever attempted. The innovative sampling equipment and analytical methods employed by the CARP are supported by an Internet-accessible data management system. The data collected will be used to carry out a detailed sediment and contaminant fate and transport modeling effort, as well as to guide source trackdown and remediation efforts.

The CARP sampling program is managed by the New Jersey Department of Environmental Protection (NJDEP) and the New York State Department of Environmental Conservation (NYSDEC), and coordinated by the Hudson River Foundation. The New York field sampling program is conducted by NYSDEC personnel working with the US Geological Society (USGS) and the New York City Department of Environmental

Protection. In New Jersey, the NJDEP has contracted with Rutgers University, Stevens Institute of Technology, the USGS, and the NJ Harbor Dischargers Group to conduct their field program. In order to accommodate the large number of samples collected under both field programs, numerous laboratories across the US and Canada are contracted to analyze the samples. The US Army Corps of Engineers and the NYSDEC have worked with Battelle Ocean Services to develop a computerized management system for the huge volume of data collected by the sampling programs. The Hudson River Foundation manages the CARP Quality Assurance Program (contracted to Booz-Allen & Hamilton), as well as the CARP modeling effort (contracted to HydroQual, Inc.) and its associated Model Evaluation group.

(continued on page 6)



Sampling the waters of the Harbor Estuary aboard US EPA's *Cleanwaters*.

# Mini-grants are Back!

Laura Bartovics

In 1991, when the Comprehensive Conservation & Management Plan was still under development, HEP established a Public Involvement and Education Mini-grant Program. The program was designed to encourage citizen participation in protecting and restoring the estuary by offering small grants of up to \$4,000. In three grant cycles from 1991 to 1994, more than \$150,000 was awarded to fund forty-two projects.

Now, after much encouragement from members of the Citizens Advisory Committee, HEP Mini-grants are back. Just this spring, the new Mini-grant Program awarded a total of \$37,200 to the eleven organizations whose projects are summarized here.

The 2001 Request for Proposals, released in November, inspired fifty-five organizations to submit their projects for funding. It was a remarkable response, attesting to

the widespread interest in protecting the Harbor's estuarine ecosystem. Due to this great demand, the HEP Management Committee has doubled the funds available for the next Mini-grant cycle. Keep a lookout for this year's RFP arriving in September! ❖

**Laura Bartovics** (*New York Sea Grant*) is the Outreach Coordinator for the NY - NJ Harbor Estuary Program.

## Alley Pond Environmental Center (APEC)

APEC will coordinate *Act for Estuaries*, a project designed to reach local middle school teachers, students, and their families to increase understanding and appreciation of the estuary. APEC will produce a teacher's guide explaining the characteristics, features, and function of estuaries, as well as the environmental issues that threaten them. The guide will be used to conduct a teacher training workshop that will introduce in-class and outdoor hands-on activities for teaching students about estuarine ecosystems and associated topics. As part of the *Act for Estuaries* project, ten teachers and their students will visit APEC for a 2 ½ hour workshop examining the area's flora and fauna, their habitats, relationships, and interdependence on each other and the physical environment. These students and their parents will also be encouraged to participate in two environmental service projects.

[www.alleypond.com](http://www.alleypond.com)

## Metropolitan Watershed Outreach and Education Committee (MW7)

The Committee will conduct a Weequahic Lake Drainage Area Storm Drain Marking project. Although the lake is physically located in Newark, storm drains from Hillside, Elizabeth, and Newark all empty into it. The lake itself drains into Newark's Peripheral Ditch (formerly known as First River), which in turn discharges to Newark Bay, and hence the NY-NJ Harbor Estuary. On the same Spring day, three 6th grade classes, one from each of the towns, will place curb markers to identify the storm drains near their schools that empty into Weequahic Lake. Later in the day, the students will come together for an event in Weequahic Park, symbolically representing the water that flows into the lake. This event will emphasize to students and local officials that storm drains, waterways and municipalities are all interconnected and that non point source pollution can have detrimental effects.

[www.njwma7.org](http://www.njwma7.org)

## Mariners Marsh Conservancy, Inc. (MMC)

MMC will remove debris from the stream that connects Mariners Marsh to the Kill Van Kull, known both as Bowman's Creek and Newton's Creek, and the surrounding area. This will allow the stream to be flushed by the waters of the Kill Van Kull as the tides rise and will also permit fresh water from the creek to flow freely into the Kill. MMC will organize two volunteer clean-ups to locate and gather debris, then hire machinery and a dumpster to facilitate its removal from the park. While working on the project, MMC will keep a photographic record of progress and continue to educate the public about the marsh, its value to the region's citizens, and its importance in the Harbor Estuary ecosystem.

### Wildlife Conservation Society (WCS)

WCS's New York Aquarium will conduct its *Beach Ecology and Care of Habitats (BEACH)* project for five elementary classes in Brooklyn District 21. Project BEACH is an innovative marine science educational program whose primary objectives are to teach coastal ecology, encourage stewardship of the shore and promote community awareness. Each class will participate in the project's three components:

- Beach Ecology and Collecting Techniques - hands-on exploration of the sandy shore to emphasize adaptations and techniques of specimen collecting;
- Invertebrate Design - cooperative learning, dissection, animal handling and microscopic investigation of marine invertebrates; and
- Marsh Trip at Gerritsen Creek – exploration of salt marsh ecology and conservation issues through discussions with field biologists and “Marsh Metaphors,” a game highlighting the various benefits that marshes offer.

[www.nyaquarium.com](http://www.nyaquarium.com)



### Harbor Estuary Program MINI-GRANTS



### Orangetown Historical Museum & Archives (OHMA)

The Museum will create a set of 4 maps demonstrating the history of the Sparkill Creek and adjacent land use for its exhibition, *Down to the Hudson: The Sparkill Creek*. The maps will depict land use during four time periods: Native American and colonial farming periods, the 19<sup>th</sup> century industrial revolution, 20<sup>th</sup> century suburbanization, and present-day residential and commercial use. In addition to the maps, the exhibit will use photographs and text to show how the creek serves the community recreationally, as a wildlife sanctuary, and most importantly as a protective watershed. Finally, the exhibit will describe current efforts to solve the creek's problems, initiated both by government at all levels, and by private civic groups. The exhibition also will be adapted as a traveling exhibit that will visit local high schools, libraries and civic buildings free of charge as part of the museum's outreach program.

### Hackensack Riverkeeper, Inc. (HRI)

HRI will produce, print, and distribute 40,000 *Hackensack Riverscaping* booklets. Stormwater runoff from non point sources (NPS) is a major contributor to water pollution in the Hackensack River watershed and the NY/NJ Harbor Estuary Complex. This NPS pollution is coming from innumerable sources, including the homes and yards of watershed residents. These riverscaping booklets will provide citizens with educational materials tailored to their watershed and increase their ability to be good river stewards who intelligently protect and enhance the watershed. HRI will distribute the booklets through their programs, mailing list, special presentations, conferences, and other events.

[www.hackensackriverkeeper.org](http://www.hackensackriverkeeper.org)

## News from the CARP

(from page 3)

The NJDEP began its field sampling program in June of 2000. The major components of the monitoring program focus on surface waters in New Jersey and include the following:

- measuring toxic contaminant concentrations in the waters of the Passaic, Hackensack, Elizabeth, Rahway and Raritan Rivers, and the Arthur Kill, Newark Bay complex, and Kill van Kull;
- calculating toxic contaminant loadings at the head of tide of the Passaic, Hackensack, Elizabeth, Rahway and Raritan Rivers;
- measuring concentrations and calculating loadings of toxic contaminants discharged from municipal sewage treatment plants, combined sewer outfalls, and storm water outfalls; and
- monitoring sediment transport and hydrodynamics within the estuary and its tributaries.

The water quality sampling is conducted using Trace Organic Platform Samplers (TOPS), which provide separate measurements of dissolved contaminants and contaminants bound to suspended sediment. Traditional grab sampling techniques are also employed. State-of-the-science high-resolution analytical procedures are used to measure extremely low levels of the toxic contaminants. Through March of this year, 100 separate samples have been collected in 14 surveys during storm and base flow conditions. In addition, all 12 of the NJ sewage treatment plants in the region have been sampled at least twice. It is expected that this phase of the NJ sampling program will be completed by the end of 2002.

The New York monitoring program, initiated in September

1998, is divided into four major areas: surface water quality, point source discharges, sediments, and biota. The NYSDEC work has been conducted estuary-wide and has been designed to complement, but not duplicate, the NJ sampling program. State-of-the-science sampling equipment including TOPS have been used to collect over 250 samples of water, sewage effluent, and landfill leachate. In addition, over 580 sediment samples and 1200 biota samples (including zooplankton, benthic invertebrates, fish, crustaceans and cormorants) have been collected. High-resolution analytical methods have been used to determine contaminant concentrations. The fieldwork component of the NY monitoring plan is nearly complete. Data is being reviewed, validated, and placed into the CARP database. The Port Authority of NY and NJ is providing additional funds for an intensive polychaete (worm) sampling effort that will be conducted this summer.

In December 2001, work began on the CARP's sediment and contaminant fate and transport modeling effort. The model will include point and non-point source loading inputs, estuarine hydrodynamics and sediment transport, contaminant fate and transport, bioaccumulation, and toxicity. The modeling will be based on the System-Wide Eutrophication Model (SWEM), developed by HydroQual, Inc., and the Farley-Thomann contaminant fate/transport/bioaccumulation model, developed by Manhattan College. Modeling will occur in two phases, with Phase I combining the two models on the SWEM grid, and Phase II increasing the model resolution and providing sediment fate and transport information. The goal of the model is to provide a tool to predict the potential effects of different toxic contaminant

management activities and to provide answers to the two main CARP questions discussed earlier.

Booz-Allen & Hamilton is responsible for ensuring that all of the CARP work has been performed in accordance with the approved quality assurance procedures, and that the data collected meets the quality objectives established for the program. The CARP Data Management Program, managed by Battelle Ocean Services, has four primary functions: Sampling Logistics Support, Database Loading, Data Verification, and Distribution of Results. Currently, the CARP database consists of more than 10,000 samples and over 500,000 records. During the data collection and validation phases of the program, data are distributed primarily using a restricted access CARP website. After the data are validated (by NJDEP, NYSDEC and Booz-Allen & Hamilton), it will be made available to the general public through the website. In addition, the Army Corps of Engineers is currently leading an effort to distribute and display the CARP data through a user-friendly web-based Geographic Information System (GIS). ❖

**W. Scott Douglas** is the Dredging Program Manager for the Office of Maritime Resources, NJ Department of Transportation. He monitors the implementation of the NJ Toxics Reduction Workplan.

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**Teachers' Guide to Water**  
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**NY - NJ Harbor**  
**Estuary Region**  
 View the guide on-line at  
[www.harborestuary.org](http://www.harborestuary.org)  
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 to request a free copy

## Mini-grants are Back!

(from page 5)

### New Jersey Audubon Society (NJAS)

NJAS will provide citizens of the Raritan Bay Shore with a series of family oriented environmental education seminars to address the ecological importance of stream corridors, salt marshes, tidal wetlands and natural beachfront. *Exploring Raritan's Shores*, a series of four outdoor seminars, will take place at sites identified by the Raritan Bay Wildlife Habitat Report, produced by NJAS after a three-year wildlife and habitat inventory. Three of these sites are also on the HEP Priority Acquisition and Restoration Site list. An experienced NJAS teacher-naturalist will lead the trips with help from partnering organizations. Through visitation to one or more of the remaining natural areas along the bay, the public will experience functioning natural systems and understand the important role they play in maintaining a healthy harbor estuary.

**SEPT 27** Treasure Lake

**SEPT 28** Conaskonk Pt. Wetlands

**OCT 11** Whale Creek & Seidler Beach

**OCT 12** Raritan Bayfront Park

[www.njaudubon.org](http://www.njaudubon.org)

### Randall's Island Sports Foundation (RISF)

RISF will offer its Kids Island Club (KIC) Nature Program to three Washington Heights/Inwood and Harlem Middle School classes. The classes' science teachers will work with staff from RISF, Bank Street College, and NYC Parks Natural Resources Group to explore techniques for conducting water, soil and marine life sampling. The group will then teach these techniques to the KIC Nature students and incorporate the program into the class curriculum. Each class of students will make seven trips to the Island's Hell Gate Inlet to conduct an inventory of marine and bird life and study water tides, water composition and other relevant environmental conditions. After an exploration of the site, the students will work in small groups to study specific organisms or other topics of their choice and pursue their research in class. Students will develop their work into research papers and present these to the class.

[www.risf.citysearch.com](http://www.risf.citysearch.com)

### New Jersey Project WET Program (NJ WET)

Project WET will sponsor eight workshops for a total of 140 teachers of grades 3-10 in New Jersey's Harbor Estuary Region. The program will establish a committee of interested partners to integrate accurate and interesting information about the Harbor Estuary into select lessons from the award-winning Project WET (Water Education for Teachers) and WOW! (Wonders of Wetlands!) curricula. Trained facilitators will guide the workshop participants through several hands-on, interdisciplinary lessons, which they will then use with their students. It is estimated that they will educate more than 4,000 students who live in the estuary about its importance and cultural, natural and economic value.

Colleen Gould, WET Coordinator - [cgould@superlink.net](mailto:cgould@superlink.net)

### Passaic River Coalition (PRC)

PRC will facilitate a collaborative planning program with local governments to promote the continued creation of a greenway corridor of open space and public access, and to develop educational and informational materials to convey the objectives. A committee of citizens and local government representatives from the lower valley of the Passaic River will examine the successes of the original Passaic River Restoration Project (PRRP) and develop an updated plan of action with new objectives. The PRRP II will be a GIS-based study assessing past initiatives and identifying new opportunities to preserve open space, develop parkland, increase access to the river and promote efforts to improve the health of the Passaic River. The products of the project will be a Passaic River greenway plan and a 17"x 22" full color map of the region identifying existing open space and proposed projects of the new plan.

[www.passaicriver.org](http://www.passaicriver.org)

## The Faces of the Harbor Estuary Program

**Cathy Yuhas** joined the Harbor Estuary Program Office in January as the HEP Technical Specialist with New Jersey Sea Grant. She earned her M.S. from NJIT/Rutgers U. in May 2001, where her research compared benthic communities in *Spartina* and *Phragmites* dominated salt marshes.



**Nancy Steinberg** moved to the Pacific Northwest in March after more than eight years with HEP and the Hudson River Foundation. She continues her work on the West Coast at the Hatfield Marine Science Center in Newport, OR.



**Marc Matsil** accepted a position with NJ DEP as Assistant Commissioner for Natural and Historic Resources. He had been Chief of the Natural Resources Group at the City of New York Dept. of Parks & Recreation.



**Nancy Niedowski** of the US Fish & Wildlife Service agreed to serve as Chair of the HEP Habitat Work Group, the position formerly held by Marc Matsil.

## COMMITTEES & WORK GROUPS

### CITIZENS ADVISORY COMMITTEE (CAC) CO-CHAIRS

Steve Barnes, Rahway River Association  
Eugenia Flatow, Coalition for the Bight

### SCIENCE & TECHNICAL ADVISORY COMMITTEE (STAC) CO-CHAIRS

J. Frederick Grassle, IMCS Rutgers University  
Dennis Suszkowski, Hudson River Foundation

### CONTAMINATION ASSESSMENT & REDUCTION PROJECT CO-CHAIRS

Dennis Suszkowski, Hudson River Foundation  
Tom Wakeman, Port Authority of NY & NJ

### DREDGED MATERIAL MANAGEMENT INTEGRATION WORK GROUP (DMMIWG) CO-CHAIRS

Jim Tripp, Environmental Defense  
Tom Wakeman, Port Authority of NY & NJ

### HABITAT WORK GROUP CHAIR

Nancy Niedowski, US Fish & Wildlife Service

### NUTRIENTS WORK GROUP CO-CHAIRS

Tom Amidon, New Jersey DEP  
Phil O'Brien, New York State DEC

### PATHOGENS WORK GROUP CHAIR

Jim Olander, US EPA Region II

### TOXICS WORK GROUP CO-CHAIRS

Bob Nyman, US EPA Region II  
Tom Belton, New Jersey DEP  
Simon Litten, New York State DEC

## The River Project (TRP)

The River Project, located at Pier 26 in Manhattan, will host a series of free, educational events for the public including open houses with outdoor science activities and demonstrations, seminars, conferences, lectures, and barbecues. These events will be linked to ongoing research at TRP's field station and educational programs such as marine biology internships for high school students. The purpose of the events will be to call the attention of city dwellers to the natural resources in their backyard, the function of science in the estuary, and the importance of stewardship and conservation.

[www.riverproject.org](http://www.riverproject.org)

## Upcoming Events at The River Project

- ◆ **July 4**, 6-8 pm  
River Project July 4<sup>th</sup> BBQ
- ◆ **July 18**, 6-8 pm  
Thursday BBQ:  
Fish of the Hudson River
- ◆ **August 1**, 6-8 pm  
Thursday BBQ:  
TRP Intern Research Projects
- ◆ **August 11**, 3-6 pm  
Crab Crunch!
- ◆ **August 29**, 8-11 pm  
Urban Divers Screening: Live  
from the Bottom of the Harbor
- ◆ **September 10**, 5:30-9 pm  
Oyster Benefit

For information on these and other events, please visit  
[www.harborestuary.org/  
calendar.htm](http://www.harborestuary.org/calendar.htm)



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Harbor Estuary Program

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