

COMMISSIONER'S COLUMN



The Campton Dam, at the intersection of NH Routes 49 and 175, showing the effects of TS Irene on August 28, 2011; the storm event kept many DES programs on high alert.

DES response to natural disasters

With the passing through of Tropical Storm Irene, Mother Nature has once again reminded us of her power. Every New Hampshire county was affected to some degree, and northern New Hampshire was hit and hit hard with heavy rains and winds. Tens of thousands of us, including my family, lost power for several days. The rainfall turned peaceful rivers into raging forces the likes of which most people have never witnessed.

When New Hampshire faces risks from natural disasters such as these, many of DES's programs and staff are put on alert or mobilized into action. While most people are accustomed to news related to the operations and activities of the DES Dam Bureau during flooding events, the reality is that DES's preparedness for, response to, and recovery from these events goes far beyond a single program.

In the event of an emergency, DES is a support agency under the New Hampshire Emergency Operations Plan (State EOP). Under the State EOP, the state's emergency response is segmented into types of assistance called Emergency Support Functions (ESFs), such as transportation, communications and alerting, and public works and engineering. Each ESF has a primary agency and supporting agencies that are responsible for coordinating the state's response for that function, and DES is a supporting agency for seven of the 16 ESFs. Overall coordination

Commissioner, *continued on page 6*

Buck Street dams' removal coming soon

Since the 2006 Mother's Day flood and subsequent avulsion, it's become quite clear that there's no simple solution for keeping the Suncook River within its banks nor keeping sediment from flowing downstream. But the removal of the two obsolete Buck Street dams in Pembroke and Allenstown will help to mitigate the chances of damages caused by flooding in the future, by lowering the river's flood elevations immediately upstream of the two aging dams. Removing the dams is expected to lower the water level upstream of the dams by about one foot and provide more flood storage for the Suncook River.

In addition to increasing upstream and downstream safety, removal of the two dams will improve sediment transport and passage for fish and other aquatic organism, and will allow thousands of dollars of state funds that currently go to maintaining the deteriorating structures to be redirected to other priorities. According to Grace Levergood, design engineer with the DES Dam Bureau, it "costs the state of New Hampshire about \$12,000 each year to maintain the Buck Street dams, and there is the very real possibility of hundreds of thousands of dollars being poured out for future reconstruction."

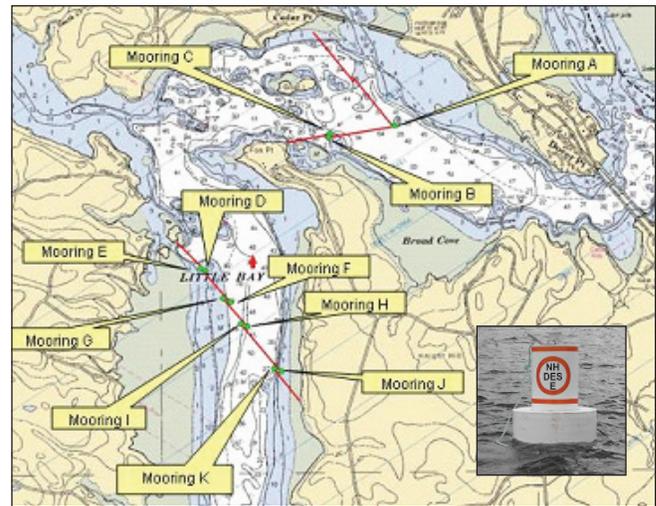
Demolition of the dams is expected to begin during September 2011, and to take eight weeks to complete. A few sections of the structures will be pre-

Buck Street Dams, *continued on page 2*

Permanent moorings help with spill preparedness

The Great Bay estuary has long been recognized as a critical habitat for species associated with the health and well being of the Gulf of Maine ecosystem. Efforts have been underway since the early 1980s by the NH Department of Environmental Services and NH Fish and Game to prepare for an oil spill that could impact this area. DES has funded several studies and participated in numerous exercises in an attempt to determine the most effective strategy to prevent or limit the environmental impact that a spill would have on Great Bay. Accordingly, DES has worked with the local oil terminals through the Piscataqua River Cooperative, the National Oceanic and Atmospheric Administration, the US Coast Guard and a professional contractor to develop this strategy.

Part of the newly-designed strategy requires the anchoring of 11 permanent moorings, which, in the event of an oil spill, will allow first responders to quickly attach and deploy booms at strategic points throughout the bay area. The moorings have large, lighted buoys attached to the permanent mooring that act as anchor points for deflection booms to redirect the flow of oil so that it can be collected by boat- or land-based skimmers. Testing to verify that the angles and exact distances between the moorings are as designed will continue for several months. It is likely that some of the mooring locations will need to be adjusted slightly to provide the most effective oil diversion system. DES will continue to test



Location of moorings in Great and Little Bays. Inset shows one of the buoys.

the strategy during 2011 as weather and river conditions allow.

There are three oil storage terminals and three power generation facilities on the Piscataqua River that store up to 127 million gallons of petroleum. Annual deliveries of petroleum to these facilities total approximately 750 million gallons.

Given the high tidal fluctuations and strong currents in the Piscataqua River, oil travels very rapidly. Therefore, it is essential that protection strategies be deployed in the quickest time possible. The use of permanent moorings will decrease the amount of time needed for deployment. ■

Buck Street Dams

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served for posterity, because the dams were once the center of the community of Pembroke and Allenstown. Historical photo documentation of each dam will be taken and signage will be added to preserve the story of this cultural resource.

The history of the dams dates back to the mid-1700s; and they originally were constructed of wood timbers. The wooden dams were later replaced with



Buck Street west dam.

stone dams in the 1800s. The dams served the Suncook Mill Company for many years before falling into disuse. The state purchased the dams in 1962 and has shouldered the costs of maintaining them ever since.

For more information on the Buck Street dams and on the flood-prone Suncook River, please see <http://des.nh.gov/organization/divisions/water/wmb/rivers/suncook-river.htm> or www.suncookriver.org. ■



Buck Street east dam.

ENVIRONMENTAL NEWS

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29 Hazen Drive • Concord, NH 03301

603-271-3503

www.des.nh.gov

editor@des.nh.gov

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LEGISLATION

Shoreland protection changes

RSA 483-B has been significantly revised, courtesy of sections 382 through 412 of HB 2 (the budget trailer bill). All changes took effect July 1, 2011. This article summarizes the more noticeable changes; more information will be available at <http://des.nh.gov/organization/divisions/water/wetlands/cspa/index.htm> as resources allow.

The most conspicuous change is

DES Laboratory moves to DHHS

Under recently passed legislation, the DES Laboratory is now officially the Division of Public Health Services – Public Health Laboratories—effective July 1.

The name was easy to change; the move to a new computer network, emails, website, etc. is more challenging and will not be completed until after September. Until that time, laboratory information and staff may be contacted through the DES website.

Please note that the quality of the laboratory tests has not changed, nor are there any plans to change the kinds of tests or services offered. The lab staff, phone numbers and email addresses, web links as well as test fees remain the same. The most notable change for the moment is a new address to which to send samples and to remit payment for invoices. Lab staff continue to be available to answer all questions and concerns relative to test results and requirements. Reports that are currently electronically sent to the DES Drinking Water and Groundwater Bureau will continue to do so and appropriate reports will automatically be imported into the Environmental Monitoring Database. While the laboratory transitions to a new server, all current DES web links to the laboratory are functional for information and for ordering test kits. ■

to the title: RSA 483-B is now the “Shoreland Water Quality Protection Act” (SWQPA). Changes most likely to directly benefit all shoreland property owners include the addition of a permit by notification (PBN) for projects “that have no impact on water quality,” and meet the specified notice, size and purpose requirements; the deletion of leaf/needle litter, stumps, woody debris, stones and boulders from the definition of “natural ground cover” (meaning these materials can be removed from the waterfront buffer); modifications to the scoring system for the point/grid system in the waterfront



Photo by Sandy Crystal, DES.

buffer to assign points to shrubs and groundcover and to increase the points assigned to various diameters of trees (meaning fewer trees and saplings are needed in any given grid section); and replacing the process for obtaining a variance from the minimum development standards with a waiver process, under which waivers are to be granted if “strict compliance with the minimum standards ... will provide no material benefit to the public and have no material adverse effect on the environment or the natural resources of the state.”

Changes that will benefit those who do not comply with the law include that DES is now allowed to enter property only after written notification to the property owner; penalties can now be assessed only against someone who violates the Act **and** “damages the public waterway” **and** fails “to make a good faith effort at remediation and restoration” after notice from DES; the maximum civil penalty has been reduced from \$20,000 per day of a continuing violation to \$5,000 for each continuing violation; and criminal penalties have been eliminated. ■

Lean project improves rulemaking process

An unusual Lean project in 2010 has resulted in revisions to the statutory rulemaking process in 2011. The project is believed to be the first in the country in which employees of both the executive and legislative branches participated to try to “lean” a process affecting both branches. Participants examined the first part of the formal rulemaking process, before proposed rules are reviewed by the Joint Legislative Committee on Administrative Rules (JLCAR). Many of the resulting recommendations to improve the process and facilitate public participation were included in SB 161, enacted as Laws of 2011, Ch. 252 (effective September 11, 2011).

One change championed by DES will legitimize public review and comment on proposed revisions to an initial proposal before an agency files a final proposal for JLCAR review. Under the current process, the only “official” opportunity for the public to comment on any changes made by an agency from the initial proposal to the final proposal is at the JLCAR hearing. Under the new process, the agency can prepare a draft final proposal and solicit public comment on it, and even may hold an additional public hearing. Depending on the comments on the draft final proposal, the agency can further revise the rules before filing the finished final proposal. Preparing a draft final proposal and seeking additional comment is not mandatory; the agency must decide whether the comments and revisions warrant the additional step. In cases where significant changes to the initial proposal are made, though, this will provide an additional opportunity for public input. ■

A DAY IN THE LIFE

Another “office” day up in smoke!

Ray Walters, Compliance Measurement and Data Programs Manager,
DES Air Resources Division Compliance Bureau

You can see them as you drive the highways and byways of New Hampshire. Smoke stacks poking above the tree line, over a town or an industrial area. Some are hundreds of feet high. On occasion, you might see several people standing on a circular metal platform about halfway up the stack, crowded among boxes of monitoring and sampling equipment, probes and sampling lines. If so, one of them is likely to be an air pollution control engineer from the Testing and Monitoring Section of the Air Resources Division Compliance Bureau.



During a recent stack test, the testing company moves a sampling probe.

The Testing and Monitoring Section comprises three engineers. One engineer is always on-site during a “stack test” to ensure that the facility is at normal operation, the EPA test methods are followed correctly, and that the collected data is accurate and representative. All this while being mindful of the additional hazards and safety precautions associated with climbing and working at 200 feet in the air.

Each year, DES observes about 50 stack tests for compliance. Testing is typically required by the air permit issued by DES, and is conducted by a third-party testing company hired by the facility. The type of source and the rules that apply dictate the frequency of stack testing. Some tests are performed only once or very infrequently, while other facilities are required to have more frequent testing. Many tests are required of sources to demonstrate compliance with public health-based emission standards. A newly-permitted source may be required to conduct testing to verify the emissions values used in the application for a permit, or to ensure that its air pollution control equipment is working as expected and meeting the control efficiency standards.

Some sources—typically those with the highest emissions of air pollution, like power plants—are required to have a continuous emissions monitoring system. This is either

through instrumentation permanently installed on the stack or process to measure the emissions of one or more pollutants. There are about 30 continuous emissions monitoring systems operating in New Hampshire, which require recertification at least once each year to ensure the continued accuracy of the data that is recorded.

The days of a DES stack test engineer are typically long—frequently 10 to 14 hours on-site. The tests proceed no matter what the weather, fair and sunny, or in the wind, rain, snow and cold. When not on the stack, the engineer is observing the process in the facility control room or observing the testing activities on the ground, such as equipment calibrations and sample recoveries. Once back in the office, the engineers are reviewing testing data and reports, or preparing for the next test ... and hoping for a sunny day. ■

EPA rule addresses cross-state air pollution

On July 6, EPA finalized a rule that protects the health of millions of Americans by helping states reduce air pollution and attain clean air standards. This rule, known as the Cross-State Air Pollution Rule, requires 27 states to significantly improve air quality by reducing power plant emissions that contribute to ozone and/or fine particle pollution in other states, such as New Hampshire. For more information about the rule, please visit www.epa.gov/airtransport.



GREENERPALOOZA IV! Tara Albert (facing camera) speaks with interested concert-goers at the DES booth about the environmental benefits of electric lawn mowers, energy efficiency and conservation during the recent Meadowbrook “Greenerpalooza IV” event.

BEST MANAGEMENT PRACTICES

How green is your turf management?

This fall, DES is partnering with the Seacoast Stormwater Coalition to launch a year-long project to help reduce pollution caused by fertilizer application on community playing fields and other landscaped areas. Over-fertilizing and fertilizing at the wrong time of year wastes both time and money, and contributes significant levels of pollution to local water bodies. In the Seacoast area, that includes Great Bay and Hampton Seabrook Estuary.

The project kicks off with a free workshop on September 19 called “Are you Green Enough: Best Management Practices for Municipal Turf Managers, Turf Care Professionals and Landscapers.” Attendees will learn how to maintain playing fields, spaces along sidewalks, traffic islands, and other green spaces in town while keeping water clean. Organic fertilizers and their impacts also will be covered. Participants will have a hands-on opportunity to learn how to use a “reflectance meter,” a new technique that helps to avoid over-fertilization by measuring the “greenness” of grass. After the workshop, interested practitioners will be able to borrow a reflectance meter to test their community’s turf.

The workshop’s goal is to get municipal turf managers, turf care professionals, and landscapers who work for communities to not only use water-friendly techniques, but to also provide feedback to the Coalition on what practices are feasible and what practices might be missing. The Coalition plans to use this feedback to create a best management practices manual — one that will be written by and for people who actually do turf management work with support from local experts. The final part of the grant project will involve communities piloting the practices in the manual and documenting their effectiveness.

The Seacoast Stormwater Coalition is a group of 15 municipalities subject to the Environmental Protection Agency’s municipal separate sewer stormwater system permit, who work together to meet the permit’s requirements. The project is funded by a DES Coastal Program grant that is administered by the town of Greenland.

To learn more about the September 19 workshop, please see <http://des.nh.gov/organization/commissioner/pip/calendar/2011/documents/20110919-invite.pdf>, or contact Cathy Coletti, DES Coastal Program, at catherine.coletti@des.nh.gov or call (603) 559-0024. ■



RESTORING OUR WATERS

Clean water projects to receive much-needed funding

Cities, towns and volunteer organizations across the state continue to make progress toward protecting and restoring our lakes and rivers with assistance from the DES watershed assistance and restoration grants program. Eight projects were awarded a total of \$536,000 in grant funds to protect or restore local water resources. Four of the projects will help restore polluted rivers and brooks located in urban areas.

The awarded funding went to: Brentwood, Cocheco River Watershed, Dover, Green Mountain Conservation Group, Hodgson Brook, Lakes Region Planning Commission, The New Hampshire Rivers Council and Wolfeboro.

For more information regarding the Watershed Assistance and Restoration Grants program, please see <http://des.nh.gov/organization/divisions/water/wmb/was/categories/grants.htm> or contact Jeff Marcoux at (603) 271-8862. ■

RECOGNIZING SERVICE

Rumba, BNH’s Volunteer of the Month

Rick Rumba was selected as Breathe New Hampshire’s Volunteer of the Month for August 2011. Rick, who has worked in the field of environmental health for over 13 years at DES, serves on the BNH Lung Health Advisory Committee, and was instrumental in developing the close partnership between DES and BNH. For more on Rick’s achievements, please see <http://www.breathenh.org/Page.aspx?pid=546>. Congratulations Rick! ■



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of these activities is conducted via the state's Emergency Operations Center (EOC) in Pembroke.

During Tropical Storm Irene, key DES staff worked 12-hour shifts at the EOC and additional staff tracked and reported activities to the EOC via a DES Incident Command Center located at the DES offices on Hazen Drive in Concord. Additional staff monitored EOC activity using the state's Web EOC, a web-based tool used state-wide by all levels of government to communicate and report on emergency situations.

Protecting public safety during and after a natural disaster is paramount not just for DES, but for every level of government and for many not-for-profits as well. When given the chance, as was the case with TS Irene, our Dam Bureau, drinking water and wastewater programs prepared for potential impacts of the storm by lowering water levels in our dams, communicating with private dam owners about water level management, and contacting municipal drinking water and wastewater treatment facilities to remind them to take necessary precautions. Our public information staff updated the DES website with critical information and gave prominent billing to a link to the state's emergency information website, ReadyNH.gov.

As TS Irene passed over New Hampshire, DES staff were at work. As you may have witnessed via news coverage, the DES Dam Bureau staff were busy responding to concerns about the safety of several dams. Other DES programs, including our drinking water, wastewater and spill response crews, were responding to situations and collecting and reporting information to the EOC from our cities and towns.

Once the storm had moved into Canada and the immediate threat and risk had diminished, many state agencies, including DES, were even busier responding to the damage left behind.

While our Dam Bureau remained active after the storm inspecting dams around the state to confirm their integrity, other DES programs were assessing the impacts of the storm on our residents, cities and towns. The DES Drinking Water and Groundwater Bureau worked with town and residents to address drinking water systems or wells that were compromised during the storm. (DES encourages any homeowner whose well head was over-topped with flood water to get their well water tested for bacteria.) Similarly, our Wastewater Engineering Bureau was busy assisting municipalities whose wastewater treatment facilities were inundated by flood or stormwater surges. Close to 50 wastewater treatment plants from around the state reported some level of impact.

Two of our busiest programs following an event like TS Irene include our Spill Response Program and Wetlands Bureau. The DES Spill Response program's small crew assists

DES Bureaus/Programs Most Involved in TS Irene

- Dam Bureau
- Drinking Water & Groundwater Bureau
- N.H. Geologic Survey
- Public Information & Permitting Unit
- Rivers Management Program
- Solid Waste Program – debris management
- Spill Response & Complaint Investigation Section (oil spills)
- Subsurface Systems Bureau (septic systems)
- Underground Storage Tank Program
- Wastewater Engineering Bureau
- Wetlands Bureau

with countless situations ranging from flooded gas stations and industrial propane tanks washed down the river to homeowners whose oil tanks have tipped over in their flooded basements.

Flooding and flash flooding during TS Irene caused many of the rivers in northern New Hampshire to erode their banks, in some cases severely damaging roads and bridges as well as many businesses and homes around our state. Working quickly and cooperatively with the state's Department of Transportation, municipal officials and private parties, the DES Wetlands Bureau issued nearly 80 emergency authorizations to conduct work in the state's rivers and wetlands in order to address a threat to public safety or public health or an imminent threat of significant damage to property. These emergency authorizations facilitated the prompt reconstruction and reopening of major state highways, including Route 302 in Crawford Notch, Route 16 in Pinkam Notch, Route 49 in Campton, and the Kancamagus Highway (Route 112), as well as efforts to protect homes from being washed down river. The Wetlands Bureau will continue to work with property owners to address longer-term river stabilization efforts, drawing on the expertise of our fluvial erosion hazard program staff in the New Hampshire Geological Survey and the state's Rivers program, who have together conducted numerous site visits and created an inventory and digital map of the erosion impacts of TS Irene.

We here in New Hampshire have, unfortunately, experienced a number of major storms and flooding events over the past five or six years. With each storm we have learned how to be even better prepared and to work together even more effectively as a state to respond to the next major storm event.

The DES staff has received a number of kudos from members of the public for their quick action, flexibility and professionalism during this event. This is not to say that we don't have areas for improvement and more lessons to learn. So if you have any feedback on our performance in addressing TS Irene, I would welcome your thoughts, comments and suggestions.

Tom Burack, *Commissioner*

PROTECTING PUBLIC SAFETY

Years of joint training results in seamless, real-life spill response

Earlier this summer, the US Coast Guard notified the DES Spill Response and Complaint Investigation Section of a release of #6 fuel oil from the Sprague Energy River Road facility into the Piscataqua River. DES immediately joined forces with the Coast Guard, Sprague Energy, Maine Department of Environmental Protection, Newington Fire Department, Piscataqua River Cooperative (PRC), Portsmouth Naval Ship Yard, Oil Recovery and TMC Services to establish a successful unified command for addressing the spill.

The release was first discovered by a local fisherman about 10:30 p.m. on June 16. The fisherman contacted the USCG, who in turn contacted the Newington Fire Department, the first responders on the scene, followed by Sprague Energy. Sprague Energy was able to determine that the source of the leak was a corroded, small diameter pressure relief pipe with a pin hole size fracture. The #6 fuel oil was under pressure at the time of the release, which caused the fuel oil to spray over the facility's piping, shoreline, dock and



Location of the leaking fuel oil at Sprague Energy with hard boom in the background. Photos by George Carrigan.

well together in resolving the incident and bringing it to a close. This close relationship did not happen by chance, but is the result of hard work over several years of joint planning, seminars and joint training exercises in Maine and New Hampshire. DES maintains a close working relationship with regulated petroleum facilities, the USCG, the PRC, the US Navy Shipyard – Portsmouth, the EPA, local fire departments, the Maine DEP, and area cleanup contractors. These close relationships have proven time-after-time to be valuable assets when faced with actual emergencies. ■



Unified Command, working over the incident sequence of events and making decisions. Photo by George Carrigan, DES Spill Response and Complaint Investigation Section.

river. Eventually, it was estimated that less than 200 gallons of #6 fuel oil had been lost. Since the fuel oil release impacted not only the land but also the river, Sprague Energy immediately began to lay oil containment booms on the river, hired cleanup contractors, and started the river reconnaissance to determine the extent of the release.

As the number of responders and government agencies arriving at the incident grew, it was evident that a unified command was necessary to handle the decision making and remediation efforts. While it was eventually determined that the volume of oil spilled was manageable, it is worth noting that all of the responding entities worked extremely

DES.NH.GOV

Website updates reflect changes at DES

Due to the recently adopted state budget, changes are being made to many programs at the Department of Environmental Services. These changes may include, but are not limited to, elimination of programs, reduction in services, changes in points of contact, or changes to phone numbers and email addresses. We ask for your patience and understanding while we adopt organizational changes and update our website. ■

Report released on study of pesticides in drinking water at New Hampshire schools

DES and the US Department of Agriculture (USDA) recently completed a study to determine the occurrence of pesticides in 49 schools and daycares throughout New Hampshire. Groundwater samples were obtained from schools and daycares that use onsite wells. The samples were analyzed for the presence of 92 pesticides and degradates of pesticides. The analyses included substantially more pesticide constituents than what public water systems typically monitor for. The analyses also were able to analyze for the presence of these compounds at part-per-trillion concentrations, which is up to ten times lower than the detection limit typically applied when public water systems conduct water quality monitoring for pesticides.

At least one pesticide was detected in water samples collected from 12 of the 49 school or daycare facilities sampled. Fourteen of the 92 compounds analyzed for were detected at least at

one facility. Pesticide compounds for were detected a total of 29 times for the entire sampling program. However, *all concentrations detected were much lower than associated drinking water standards or estimated health guidance levels.* The concentrations of pesticides detected ranged from 0.1 percent to 11 percent of the applicable drinking water standard or estimated health guidance standard.

Three pesticides—atrazine, metolachlor and alachlor—constitute almost half the reported herbicide use in New Hampshire. Their greatest use is controlling weed growth in the production of corn for dairy operations, and only persons possessing a pesticide applicator's license may purchase and use these pesticides. These pesticides or their break-

down products represented 23 of the 29 instances that pesticides were detected in water samples. Vegetation growth-control pesticides generally available for purchase to the public represented five of the six remaining pesticide detections. There was only one occurrence of an insecticide being detected in groundwater.

A full summary of this study and additional information on the regulatory requirements associated with the application of pesticides in public settings, including schools, may be found at <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/rwd-11-20.pdf>. Contact Brandon Kernen at (603) 271-0660 or brandon.kernen@des.nh.gov for more information about this study. ■

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UNDERGROUND TANK CLEANUP



Photo taken during the backfill of the Lee Traffic Circle Mobil gas station excavation. Approximately 8,571 tons of gasoline contaminated soil was excavated and disposed of off-site during this summer's project. Project costs were reimbursed by the GREE Fund.



29 Hazen Drive; PO Box 95
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