THE STORMWATER QUARTERLY

National Stormwater Center ™ Summer 2018 Issue 153

Minimize Flooding with Public Planning & Capture

Stormwater Permit News

Idaho Qualifies for NPDES Permit Authority. EPA has approved the State's implementation plan that transfers the administration of specific program components from EPA to the State over a four-year period in accordance with the Memorandum of Agreement between IDEQ and EPA but subject to EPA oversight and enforcement.

EPA will suspend issuance of NPDES permits in Idaho in accordance with the State's approved schedule to transfer NPDES program authority. EPA will retain the authority to issue NPDES permits for facilities located on tribal lands and/or discharging to tribal waters.

Only three other states have not applied for NPDES authority, Massachusetts, New Hampshire and New Mexico.

A June Congressional attempt to block the implementation of the current regulation to expand the Clean Water Act jurisdiction of small streams was stopped in the Senate. However the EPA plans to promulgate a regulation that has the same outcome.

The EPA Alumni Association invites past employees to re-connect with colleagues by joining the Association. If you served for at least one continuous year as a federal employee of the EPA or you currently work for EPA but are eligible for retirement then you are eligible to join the Association. Go to www.epaalumni.com.

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INSIDE THIS ISSUE

Good Rain vs. Bad Rain

We all enjoy a light rainfall to support vegetation and replenish our water supply. Just take a walk in the rain and enjoy by remembering Gene Kelly singing . . *"Just Singing in the Rain, what a glorious feeling' I'm happy again."*

But not all rain is good. Consider Hurricane Maria that destroyed Puerto Rico, Gulf Coast flooding from Houston to New Orleans that are common events, and the strong winds that accompany storms.

If scientists are correct, more bad rain is coming. Global warming is likely to cause more frequent and more harsh storms. Oceans evaporating water to form clouds and land warming to create thunderstorms.

If we are to protect the public and minimize loss, then we must do something. The first decisions to do something: now or later? Now depends on public interest and resources.

Opponents of tax increases will cry, ***No Rain Tax.*** Yes, local taxpayers will pay most of it. Therefore, local governments must prepare their residents with projections, alternatives, schedules, and cost information.

Public planning requires the use of historic rainfall data to predict rainfall events. Selecting the volume of rainwater to manage is difficult. It may be best to cost several options.

Planning is best done with a committee of professionals, residents, and staff. After public input, elected officials must decide and implement.

Expect Opposition to a Rain Tax

Municipal Planning to Minimize Flooding

If a community has a history of flooding then there is a potential for flooding in the future. If there is no serious concern about flooding, the municipal staff may want to evaluate stormwater permit compliance. Both conditions warrant action, either plan for flooding or conduct a compliance audit.

If permit compliance is to be considered, the starting point may be controlling the volume of stormwater so the environmental controls can be more effective. Generally, the municipal staff and their drainage consultants accomplish this process.

Assuming there is a serious concern about flooding, the process should begin with community participation and consensus building. Visit the public participation article on the next page.

It's important to have a design engineer and a hydrologist to provide scientific options for consideration; however, good scientific data may not be available, then the process could become the art of selection rational decision making.

A Process

Consider data from previous storm events. Using *The Rainfall Frequency Atlas of the United States,* look at the duration of events for your area. With professional help, select the worst case data in recent history. Whether you select the 10 year, or 30 year, or the 12 hour or 24 hour event, select the greatest amount of rainfall measured in inches.

Local newspapers will carry articles of the human and physical damage as a result of the worst event. Consultants will evaluate the damage if the event occurs again.

Now you have a starting point for the current status of controls. You have a planning number that is measured in inches within a period of time such as 9inchs of rain within 12 hours.

Having a starting point, the process becomes a public exercise as described on the next page. The municipal staff can now begin to develop alternatives that consider how to minimize flooding impacts given various rainfall events.

Example

If the worst flooding event was a six inch event over twelve hours, assume a 33% increase rain event (almost eight inches over twelve hours.)

Assume an impervious urban area of 1,000 acres, the equivalent to 43,560,000sf. A six inch rain event looks like this: 43,560,000sf x 0.5 ft. = 21,780,000cf of rain water.

An increase of two inches (33%) looks like this: 43,560,000sf x 0.667 = 29,054,520cf., resulting in 7,274,520cf more water.

Converted to gallons: 7,274,520cf x 7.481gal/cu = 54,413,410 gallons of additional rain water. Or 54,000 gallons on each impervious acre added to 163,000 gallons. Where is it going to go?

Add to the problem the duration of time. If the rain duration is twelve hours, the 217,333 gallons would discharge 18,111 gallons/hour.

A Public Process

Having decided to protect the public from flooding, it would be wise to select a public advisory committee. You will need professionals and stakeholders with the public and the press invited to all meetings.

Consider that failure to protect the public could invite litigation from people that suffer damages. Local governments have a obligation to protect public health and welfare.

The committee can advise elected officials with respect to alternatives and the cost of each. Similar to how a democracy works.

PUBLIC PARTICIPATION FOR FLOOD DECISIONS

The process works if, before any decision making, the public is invited to participate. Otherwise, residents believe decisions will have been made to benefit the political power base.

Normally a committee will be formed with all stakeholders equally represented. The municipal staff would recommend to the administrator or elected officials the makeup of the committee. The municipal staff should prepare proposed agendas and options for the committee to consider.

The committee should meet frequently, probably monthly to maintain momentum. Between meetings the staff will work with a professional engineer or hydrologist to prepare options for committee consideration.

This process should give cover to the elected officials who must select solutions with a schedule and a fee structure to cover the costs.

You can assume there will be objections to any action that will increase taxes or fees. It's important for staff leadership to achieve a committee consensus, again to justify increases in taxes and fees.

MORE

According to NOAA (National Oceanic and Atmospheric Administration) sea levels rose 2.6" from 1993 to 2014. Coastal cities are in a race against time. For Miami current estimates call for an additional 13" - 34" in just the next 40 years, and for New Orleans, a city below sea level, current estimates are an additional 1.9' by 2050, a mere 30 years from now.

2017's Hurricane Harvey stalled over Houston for days, dropping an astounding 64.6" of stormwater on Jackson County.

Stormwater Permit News

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The Association is developing recommendations to improve environmental protection in the future. The draft recommendations will be available to members and then shared with the public next Spring.

The Water Environment Federation (WEF) has a program called The Stormwater Institute. The organization is designed to address stormwater runoff issues. Their website offers technical information, networking, and policy advocacy. Currently, it is developing technical tools and serves as a communication system for municipal strategies and networking.

To learn more, visit www.wefstormwaterinstitute.org.

The WEF announced the winners of EPA's Campus RainWorks Challenge, a national collegiate competition that engages students to design innovative solutions for stormwater pollution. Go to stormwater.wef.org for details.

Demonstration Project Category
First Place: University of Illinois at Urbana-Champaign
Second Place: University of New Mexico (Albuquerque)
Honorable Mention: University of Arizona (Tucson)

Master Plan Category
First Place: University of California, Berkeley
Second Place: University of Maryland, College Park
Honorable Mention: University of Arizona

First-place teams will receive a $2000 student prize to be split among team members and a $3000 faculty prize to support green infrastructure research and education. Second-place teams will receive a $1000 student prize and a $2000 faculty prize.

Boston releases 50-year flood proofing plan to meet climate risks. Early residents of Boston gradually filled in low-lying Atlantic Ocean tidelands as the city expanded. Today, some of these areas, such as East Boston and Charlestown, are among the most populated in the city. Faced with projections that the effects of climate change could drive the local sea level upward by as much as 20 cm (8 in.) by 2030 (as compared to 2000), Boston recently developed a broad-reaching plan to keep its citizens, history, and infrastructure above water.

The plan is found at: www.boston.gov/sites/default/files/03_climate_ready_boston_digital_climateprojectionconsensus.pdf

Hurricane Maria Whipped Puerto Rico

Planning for 35 Inches of Stormwater

Hurricane Maria whipped Puerto Rico with intense stormwater and hurricane winds. The storm drenched the island with flooding, crippled communications, decimated buildings, and damaged a dam that puts downstream residents at risk of catastrophic failure.

Entering Puerto Rico, Maria weakened slightly to a Category 4 hurricane, however it quickly attained its peak intensity with winds of 175 mph.

Airplanes and ships loaded with meals, water and generators were sent to Puerto Rico by the Federal Emergency Management Agency. More than 10,000 federal employees went to Puerto Rico and the US Virgin islands to help the rescue efforts and to move materials including food.

The Guajataca Dam in the island's northwest corner suffered a critical infrastructure failure. Dam failure would endanger an estimated 70,000 people. Residents below the dam were told to evacuate. With more than 95% of wireless cell sites out of service, authorities had to physically go to thousands of homes to warn people of the potential collapse.

The Environmental Protection Agency (EPA) found that more than a third of sewage treatment plants were unable to function after the hurricane. As a result, raw sewage flowed into waterways residents used for drinking and bathing. At least 74 residents fell ill with leptospirosis, a serious bacterial infection contracted by consuming or wading in contaminated water.

At least 64 people died in Puerto Rico as a direct result of the storm, with at least another 1,427 deaths indirectly related to the storm.

Lessons Learned

1. Communities must develop a plan for potential hurricanes. Only a few of the 74 Puerto Rican municipalities have the financial resources to manage flooding. But they can have a plan to survive and to protect their residents and much of their resources.
2. The Puerto Rican Government needs a backup communications system
3. Many residents live in poorly constructed structures
4. Puerto Rico does not have a tax basis to improve their infrastructure.

The Future

Puerto Rico is in bankruptcy. The Finance Board that is overseeing the island's finances said it will eliminate a $25 million scholarship fund for Puerto Rico's largest public university, as well as a $50 million annual fund for cities and towns struggling in the aftermath of Hurricane Maria. The board said it also will scrap an annual Christmas bonus for all government employees starting next fiscal year.
Puerto Rico Senate President Thomas Rivera Schatz said: "The Board threat could be worse than Hurricane Maria!"

While Puerto Rico is expected to see brief economic growth as a result of federal reconstruction dollars allocated in the aftermath of the Category 4 storm, economist Jose Caraballo told The Associated Press that the island would again have an economic depression if no additional measures aimed at development are implemented.

Hurricane season has arrived in Puerto Rico and the municipalities, without money to plan and implement controls, must organize their residents to help each other.

All Regulated Construction is a Point Source, there is No Nonpoint Source

All Construction is Regulated as a Point Source

No industry suffers more from rain impacts than construction. Rain can cause project delays and cost increases. It also can destroy previous earthwork requiring repair.

It has become important to manage rainfall on a site by containment and diversion. Federal regulations require regulated construction activities to control stormwater volume and velocity to minimize off erosion and site impacts.

This federal regulations called Effluent Guideline are standards that apply to the Construction and Development that apply to erosion and sediment controls as well as construction operations'. The nineteen (19) federal standards apply to the following operations:

1-8 — erosion & sediment control requirements,

9-10 — soil stabilization requirements,

11— dewatering requirement,

12-14 —pollution prevention requirements,

15-18—prohibited discharges, and

19 — surface outlet requirement.

While all 19 requirements apply to all regulated construction activity, the eight erosion and sediment controls apply as point source controls even if the discharge does not meet the definition of point source. The Federal standard is named the *Construction and Development Point Source Category* (40 CFR Part 450). The regulations cover stormwater discharges from all regulated construction sites and are implemented in NPDES permits.

Permitting authorities are required to incorporate these limitations directly, without any word changes, into their stormwater permits and permittees are required to implement control measures to meet the limitation in discharges of stormwater from their C&D sites. Several states have illegally reduced the limitations by changing some words. Permit authorities may apply some flexibility but only where the standard allows such suited to site-specific conditions present on each individual construction site if they are able to consistently meet the limitations and if they are consistent with requirements established by the permitting authority. The erosion standards are:

(1) Control stormwater volume and velocity to minimize soil erosion in order to minimize pollutant discharges;

(2) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;

(3) Minimize the amount of soil exposed during construction activity;

(4) Minimize the disturbance of steep slopes;

(5) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

(6) Provide and maintain natural buffers around waters of the United States, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible;

(7) *Minimize soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and*

(8) Unless infeasible, preserve topsoil. Preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed.

Most states offer training in erosion and sediment control with EPA funding for nonpoint sources of pollution. But there is no Non Point discharge except for activity less than one acre that is not part of a larger activity.

"Sue and Settle" Litigation Must Result in Cleaner Water

Lawyers Must Not Abuse Citizen Suit Solution

Under the Clean Water Act (CWA), the citizen-suit provision allows any individual or organization, that can establish standing, to bring litigation against both private parties and the Environmental Protection Agency (EPA).

When initiating the suit, a plaintiff must submit a 60-day notice of violation to the alleged polluter, with a copy to the EPA Administrator. Upon settlement, litigants must submit a copy of the consent decree to the Justice Department (DOJ) for review.

One especially easy theory to advance in citizen-suit litigation is unlawful stormwater pollution.

Stormwater regulations are exceedingly broad, and almost any business whose production process generates as a by-product anything that could be classified as a pollutant is vulnerable to a lawsuit.

Marc Robertson with the Washington Legal Foundation opined in Forbs the following: Environmental activists' inability to get state or federal enforcement has inspired an uptick in citizen suits against industrial activities.

Mr. Roberson states: In many cases, attorneys' fees can far exceed the damage from the alleged violations, leading companies to settle rather than litigate.

He points out the risk of abusive litigation — lawsuits motivated not by environmental protection but by the desire to shake down businesses for monetary settlements and attorneys' fees.

While citizen suits can be an important tool for use when the government is unwilling or unable take enforcement action it offers incentives for frivolous citizen litigation. Those incentives empower environmental ambulance chasing.

The practice of "Sue and Settle" is a valid process if it results in pollution reduction. The courts and the DOJ need to be assured that settlements results in the reduction or elimination of water pollution.

Typical complaints allege the defendants "have been discharging and continue to discharge polluted stormwater from the facility in violation of the express terms and conditions of Sections 301 and 402 of the Clean Water Act" and violate the issued industrial stormwater permit.

The National Stormwater Center offers citizen training in a free, not for profit, program called Certified Stormwater Volunteer. Go to www.National Stormwater Center.org to register.

Stormwater Permit Enforcement

Mount Vernon, NY

The United States Department of Justice has filed a civil lawsuit against the City of Mount Vernon, New York for violating the Clean Water Act. The lawsuit alleges that Mount Vernon has long failed to comply with Clean Water Act storm sewer permit requirements designed to prevent raw sewage and other illicit pollutants from flowing from the City's storm sewer system to the Hutchinson and Bronx Rivers.

U.S. Attorney Geoffrey S. Berman stated: "For years, Mount Vernon has discharged raw sewage and other illicit pollutants from its storm sewer system into the Hutchinson and Bronx Rivers. Mount Vernon has consistently failed to comply with permit requirements intended to prevent these discharges, and has flouted EPA administrative orders intended to address the problem. Today's lawsuit will protect the waters of this district by obtaining a judicial order compelling Mount Vernon to bring its sewers into compliance with the Clean Water Act."

Many municipalities, like Mount Vernon, operate "municipal separate storm sewer systems" that carry storm water and discharge it without treatment into nearby waters. Because separate storm sewer systems do not treat the water they discharge, a municipality is required by its Clean Water Act permit to maintain a program for identifying and eliminating any sewage or other illicit pollutants that are flowing into the storm sewers.

The lawsuit filed alleges that since at least January 2012, Mount Vernon has failed to comply with these permit obligations and, as a result, has allowed raw sewage to flow into its storm sewer system. Mount Vernon has also failed to comply with two EPA Administrative Orders issued to compel the City's compliance with these requirements

The Mayor of Mount Vernon, Richard Thomas said, "The cost of defiance is far more expensive than compliance. Comptroller Maureen Walker and the City Council deliberately defied numerous warnings from our administration about the threat of monetary penalties for neglecting our infrastructure."

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Another CWA Violation: An EPA inspection that was conducted in 2016, revealed that Double R Trading Inc., a company that operates a recycling plant that grinds plastic materials into small flakes, was in violation of CWA regulations. The company's facility had discharged stormwater into Dominguez Channel without a required permit. The facility had large amounts of exposed plastic materials and fragments spilled on paved surfaces throughout the facility. In addition, the facility did not have the necessary containment systems to trap plastic material and prevent releases to a waterway that flows into the Port of Los Angeles. The company also had improper outdoor oil storage. **Penalty:** $23,326 fine.

Another CWA, NPDES violations: According to the EPA, North Star Terminal & Stevedore Company, which operates a marine terminal, was found in violation of its CWA National Pollutant Discharge Elimination System (NPDES) permit. The company failed to install and maintain stormwater control measures; failed to conduct required monitoring, assessments, and inspections; failed to take corrective actions after benchmark exceedances; and failed to submit annual reports and Discharge Monitoring Reports.
Penalty: $54,600 fine. In addition, the company will spend approximately $4,500 in compliance action costs.

National Stormwater Center
John Penn Whitescarver
Executive Director

Our Nation's waters are a valuable resource that ought to be protected from illegal pollution. We support compliance with the Federal Clean Water Act by providing training and services to government and business.

2018 Training Schedule

See http://www.npdes.com for complete listing

7/23-7/24	CSI MS4 Palm Springs, CA
	CSI MS4 Omaha, NE
	CSI MS4 Dallas-Ft. Worth, TX
7/25-7/26	CSI MS4 San Diego, CA
7/26-7/27	CSI MS4 Austin, TX
8/6-8/7	CSI MS4 Kansas City, KS
	CSI MS4 Spokane, WA
	CSI MS4 Jacksonville, FL
8/9-8/10	CSI MS4 St Louis, MO
	CSI MS4 Boise, ID
	CSI MS4 Tallahassee, FL
8/9-8/10	CSI MS4 Boise, ID
8/9-8/10	CSI MS4 Tallahassee, FL
8/13-8/14	CSI MS4 Baton Rouge, LA

National Stormwater Center also Offers:

- CSI – Construction Permit
- CSI - Construction Controls
- Certified Stormwater Volunteer
- Certified Stormwater Student
- Stormwater for Decision Makers

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