MCM 3 ORI Guidance: Dry Weather Conditions & How To Find and Use Daily Weather Data

(Prepared by the Stormwater Coalition, November, 2021)

Best Times to Start ORI Field Work*...text from the "IDDE" Manual referenced in NYSDEC MS4 Permit*

Illicit Discharge Detection and Elimination

A Guidance Manual for Program Development and Technical Assessments

by the Center for Watershed Protection

and Robert Pitt University of Alabama

October 2004

Chapter 11: The Outfall Reconnaissance Inventory

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This chapter describes a simple field assessment known as the Outfall Reconnaissance Inventory (ORI). The ORI is designed to fix the geospatial location and record basic characteristics of individual storm drain outfalls, evaluate suspect outfalls, and assess the severity of illicit discharge problems in a community. Field crews should walk all natural and man-made streams channels with perennial and intermittent flow, even if they do not appear on available maps (Figure 19). The goal is to complete the ORI on every stream mile in the MS4 within the first permit cycle, starting with priority subwatersheds identified during the desktop analysis. The results of the ORI are then used to help guide future outfall monitoring and discharge prevention efforts.

11.1 Getting Started

The ORI requires modest mapping, field equipment, staffing and training resources. A complete list of the required and optional resources needed to perform an ORI is presented in Table 30. The ORI can be combined with other stream assessment tools, and may be supplemented by simple indicator monitoring. Ideally, a Phase II community should plan on surveying its entire drainage network at least once over the course of each five-year permit cycle. Experience suggests that it may take up to three stream walks to identify all outfalls.

Figure 19: Walk all streams and constructed open channels

Best Times to Start

Timing is important when scheduling ORI field work. In most regions of the country, spring and fall are the best seasons to perform the ORI. Other seasons typically have challenges such as over-grown vegetation or high groundwater that mask illicit discharges, or make ORI data hard to interpret[9].

Prolonged dry periods during the non-growing season with low groundwater levels are optimal conditions for performing an ORI. Table 31 summarizes some of the regional factors to consider when scheduling ORI surveys in your community. Daily weather patterns also determine whether ORI field work should proceed. In general, ORI field work should be conducted at least 48 hours after the last runoff-producing rain event.

Field Maps

The field maps needed for the ORI are normally generated during the desktop assessment phase of the IDDE program described in Chapter 5. This section provides guidance on the basic requirements for good

[9] Upon initial program start-up, the ORI should be conducted during periods of low groundwater to more easily identify likely illicit discharges. However, it should be noted that high water tables can increase sewage contamination in storm drain networks due to infiltration and inflow interactions. Therefore, in certain situations, seasonal ORI surveys may be useful at identifying these types of discharges. Diagnosis of this source of contamination, however, can be challenging.

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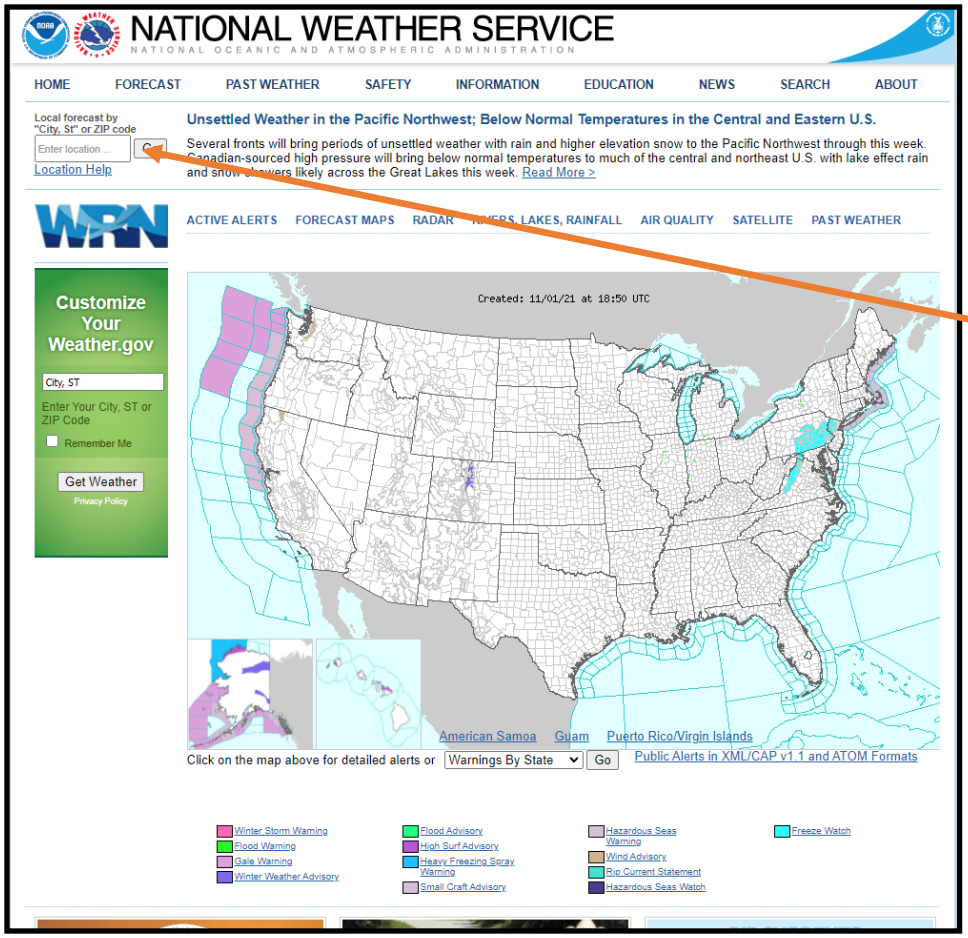
Guidance from Chiappetta (Coalition) & Kubek (Albany County DPW) ORI Training Handout—9/17/2017

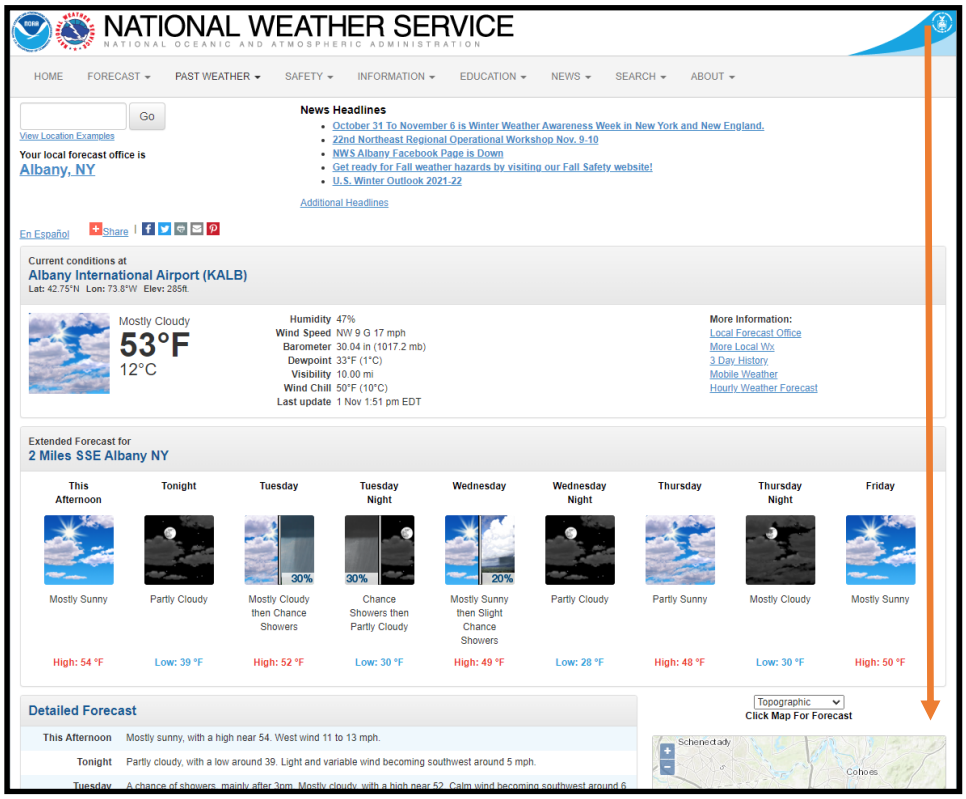
3. Check the weather
   a. In order to complete an ORI accurately, there needs to be dry weather for at least the last 48 hours. Some believe that it is not considered a rain event until at least 0.25 inches of rain has fallen. However, even that small amount of rain could lead to flowing outfalls. In this way, an outfall that may not have any illicit discharge may be running even though it did not rain a lot. This will slow down the inventory and only create more paperwork later. Although it is up to the surveyors discretion on whether or not to conduct water tests, I usually at least use the test strips when an outfall is flowing.

How to find precipitation data for previous 24 or 48 hours

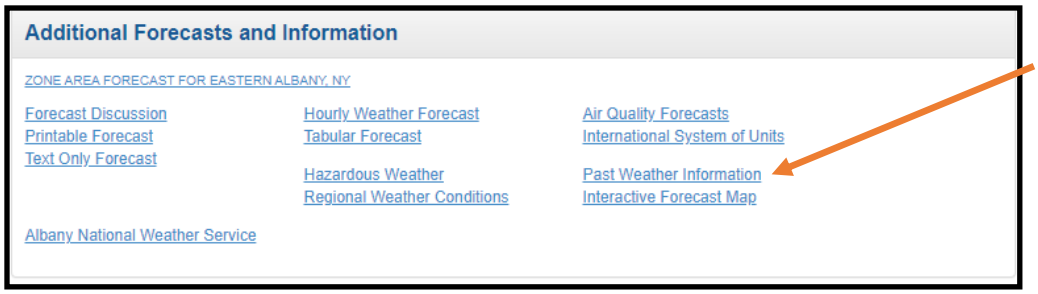


Step 1: Go to www.weather.gov

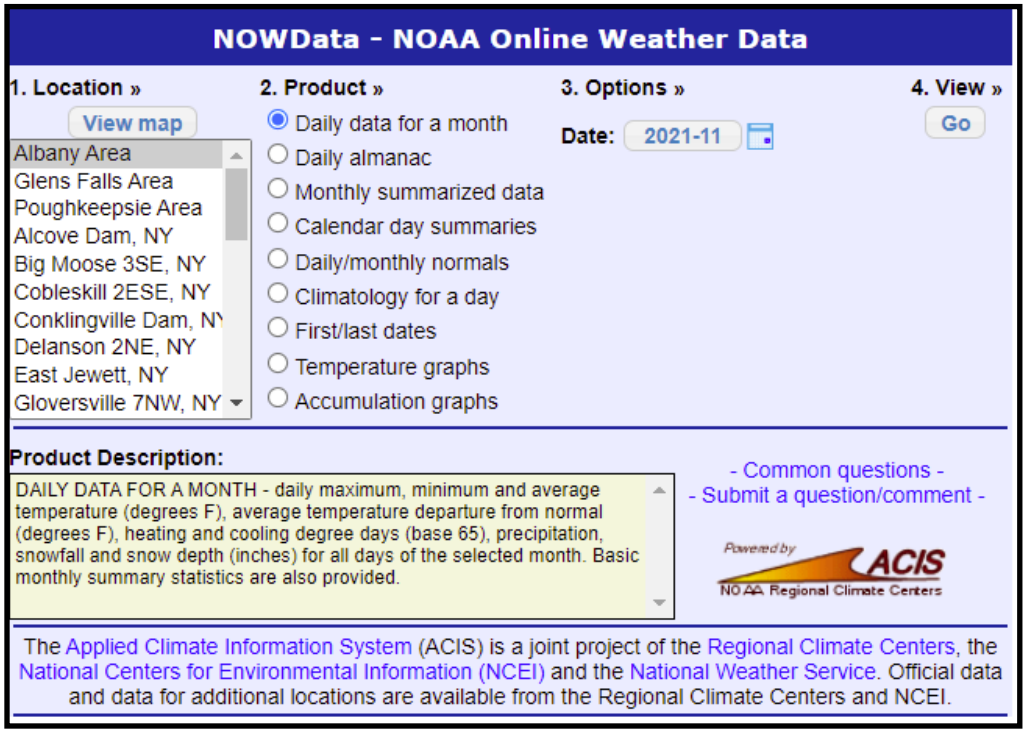
Step 2: Enter zip code



Step 3: Scroll down to "Additional Forecasts and Information" (right under-neath the Detailed Forecast box)



Step 4: Click "Past Weather Information"



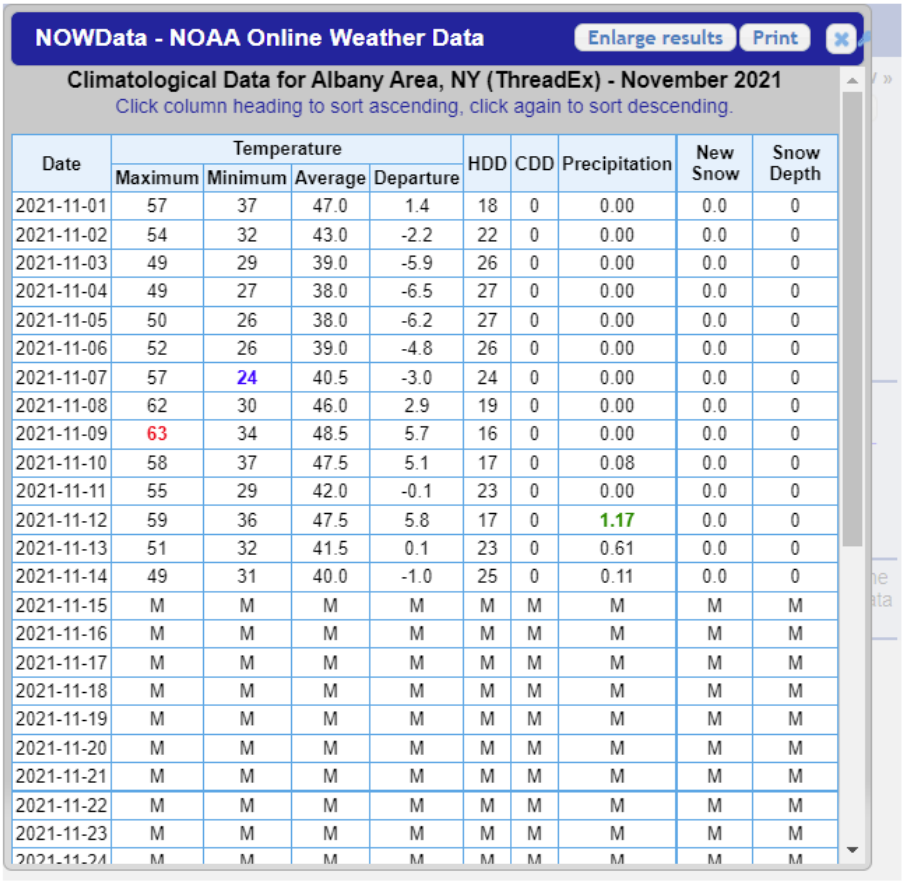
Step 5: Complete the following parameters-

1.) Location >>

2.) Product >> daily data for a month

3.) Options >> Date (the month that you wish to view)

4.) View >> (select go to generate report)



NOWData - NOAA Online Weather Data — Enlarge results — Print

Climatological Data for Albany Area, NY (ThreadEx) - November 2021

Click column heading to sort ascending, click again to sort descending.

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2021-11-01	57	37	47.0	1.4	18	0	0.00	0.0	0
2021-11-02	54	32	43.0	-2.2	22	0	0.00	0.0	0
2021-11-03	49	29	39.0	-5.9	26	0	0.00	0.0	0
2021-11-04	49	27	38.0	-6.5	27	0	0.00	0.0	0
2021-11-05	50	26	38.0	-6.2	27	0	0.00	0.0	0
2021-11-06	52	26	39.0	-4.8	26	0	0.00	0.0	0
2021-11-07	57	24	40.5	-3.0	24	0	0.00	0.0	0
2021-11-08	62	30	46.0	2.9	19	0	0.00	0.0	0
2021-11-09	63	34	48.5	5.7	16	0	0.00	0.0	0
2021-11-10	58	37	47.5	5.1	17	0	0.08	0.0	0
2021-11-11	55	29	42.0	-0.1	23	0	0.00	0.0	0
2021-11-12	59	36	47.5	5.8	17	0	1.17	0.0	0
2021-11-13	51	32	41.5	0.1	23	0	0.61	0.0	0
2021-11-14	49	31	40.0	-1.0	25	0	0.11	0.0	0
2021-11-15	M	M	M	M	M	M	M	M	M
2021-11-16	M	M	M	M	M	M	M	M	M
2021-11-17	M	M	M	M	M	M	M	M	M
2021-11-18	M	M	M	M	M	M	M	M	M
2021-11-19	M	M	M	M	M	M	M	M	M
2021-11-20	M	M	M	M	M	M	M	M	M
2021-11-21	M	M	M	M	M	M	M	M	M
2021-11-22	M	M	M	M	M	M	M	M	M
2021-11-23	M	M	M	M	M	M	M	M	M
2021-11-24	M	M	M	M	M	M	M	M	M

Step 6: This will generate a NOWData report. Precipitation is between the CDD and New Snow columns and is in inches.

The precipitation for the two days prior to the day that you are viewing the report will constitute the 24 and 48 hour rainfall.

Example: If you want to conduct ORI inspections on Monday, 2021-11-15, 48 hours prior, on Saturday, 2021-11-13 there was .61 inches of precipitation. 24 hours prior, on Sunday 2021-11-14, there was .11 inches. Combined precipitation is .72 inches. If using .25 inches of rain as a runoff-producing rain event, runoff is likely, dry weather conditions NOT met for Monday, 2021-11-15 outfall inspections.