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Sent: Monday, February 09, 2015 9:21 AM
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Cc: Muchmore, Dennis (GOV); Murray, David (GOV); Minicuci, Angela (DCH); Stanton, Terry A. (Treasury)
Subject: FLINT WATER NOTES

Hey, friends. Anticipating more coverage this week on Flint, want to make sure we are all looped in and on the same page. Treasury takes calls on funding and money and the EM. DEQ takes calls on water quality. Here's what I can share about the water quality part.

Total Trihalomethanes (TTHM) are a byproduct of too much chlorine to kill organic material in a water supply. They are among the 80 toxins water suppliers monitor. They are considered a long-term health hazard. As such, they're sampled from water systems every quarter. Systems are required to remain below 80 parts per billion on a yearly average (four quarters). Flint exceeded the average in the course of three quarters last year.

Water system operators around the state periodically get a high result for TTHMs. When consecutive quarters of testing remain at high levels, it's usually a sign that operators are using too much chlorine to address high levels of organic matter in their water source. This most frequently affects systems that use surface water as a source. And several municipal water systems around the state do use surface water (rivers) as a source.

When a water system exceeds this standard, the operator gets a very formally worded violation notice from DEQ that says, effectively, "hey, your numbers are high. Alert your customers and figure out how you're going to bring your numbers back down." This is not as serious as a boil water advisory situation. But, the (think decades) long-term risk of drinking water with high TTHMs is an increased risk of exposure to cancer causing agents, so it's not a situation that the state can accept as status quo.

Because TTHM is measured on an annual (quarterly) basis, it will take a couple quarters of clear results before the city's average falls below the guidelines. This means Flint will probably be issuing another public notice about TTHM in March, despite that the high samples were late last summer.

Flint's numbers have dropped dramatically since the November testing and they're presently in compliance with state drinking water standards.

The water as it leaves the plant is clean, sanitary and safe. However, the water supply system is old, poorly maintained and many residents' connections are also old and poorly maintained. Thus, some residents are experiencing water that smells off or is discolored. This is from the transmission system, not the production system. The three top issues appear to be

- a. Hard water interacting with cast iron pipes, causing water that looks rusty (and likely tastes a bit irony)
- b. Water sitting too long in the pipes because of valves not working properly or limited users in some sections of the system; or,
- c. Residents with old homes that have cast iron connections contributing to the hard water issue.

So, how do we message this issue in light of the many variables at play?

1. Right now, water produced at the Flint plant is meeting state safe drinking water standards.
2. DEQ is aware that many residents have concerns about smell, color and other aesthetic qualities of their water. There are several potential causes for aesthetic water conditions. Residents with these concerns are encouraged to contact the City first to report problems. They also can contact the Michigan DEQ, but the City operates the system and needs to be alerted to concerns with their system to help document problem areas and prioritize improvements.
3. Total Trihalomethane (TTHM) is odorless and colorless. It is regarded as a long-term health concern. TTHM was included in the list of toxins screened under the Safe Drinking Water Act because of its potential for long-term potential health concerns. This is why it is only sampled quarterly. The water operator is required by law to notify residents when the annually averaged