From: Alex.Buechner@Biddefordmaine.org
To: Jeff.Demers@Biddefordmaine.org; Tom.Milligan@Biddefordmaine.org; Craig.Chekan@Biddefordmaine.org
Subject: State st notes
Date: Friday, July 9, 2021 6:07:49 PM

Sorry, this is going to be a long one. If I were you, I'd be sure to have your favorite beverage in hand and be sitting down while you read this. For some reason I also feel like suggesting that you have dry pants on, but that is probably because I'm sitting at my desk wearing a bathing suit right now because it was all I had for dry clothes.
Here are my notes on what we have dealt with on State. Let me know if you feel that anything in this is not factual. I think we need to get together sometime early next week to discuss solutions.

Jeff, I know this is not ideal with all we have going on, but next week my dad is in town to help me with my bathroom remodeling project. Unless we have serious emergencies, my plan is still to try and leave by lunch time Monday-Thursday.
So meeting earlier in the day to go over this is better for me.

6/30/21 – 23 State St. Sewer backup and flooding from extremely heavy but short rain event. Nick was the supervisor on call. Code enforcement was there and had to evacuate the building. Steve and Jay went out and confirmed that the sewer downstream was flowing fine and was not backed up. The pipe just could not handle this amount of water. It has not yet been confirmed, but possible that roof drains are connected. This building had a backup on 3/31/21 (see previous notes). At the time it was suggested that they install a backflow device to avoid future issues. I was not directly involved in speaking to the property manager during either event, but I do not believe that a backflow device was installed. However, if there was a backflow device but they have roof drainage connected to it, it is not likely that the backflow device would have prevented this issue. Peak rainfall was just shy of 6"/hour.
7/9/21 – UPDATE. Have spent the last few days researching and discussing this issues. Contributing causes could include any or all of the following:

- Record rainfall rate on the date of this backup (5.9 in/h)
- Several cross connections removed while doing CSO work. These were all connections that allowed sewer into the storm and had to be closed to satisfy DEP for CSO abatement.
    - South/State intersection overflow between MAN00048 and MAN00047
    - State st overflow between MAN00056 and FCB00048
    - Briarwood Dr overflow between MAN00061 and MAN00060
- Large amounts of garbage removed from sewers. (Backup from several months ago had TONS of garbage in the line that only serves this building and was just as bad when we came to work on the most recent backup)
- Large amounts of grease build up in the pipes
- 6x8" piece of fiberglass had fallen off structure and was found downstream with rags all over it.
- Pipe is 8" and has two 15" pipes contributing to it, plus whatever comes down briarwood.
- Pipe goes from a 4.5% slope to a 0.5% slope on state st.

On 7/8 we smoke tested the private sewer in their parking lot and confirmed that there were no upstream connections to catch basins or storm lines coming from the railroad or Briarwood. We

also checked the roof and confirmed that their roof drains are not connected to sewers. Although there are still unanswered questions about the drainage for this building, the issue appears to be surcharging of state st. On 7/9 we had more heavy rain. Peak was 1.3 in/h, and total was about 2.3 in. So more rain overall, but far less intense in/h than the storm that caused that backup. Pipe was surcharging, but not enough to back up into the building. We went up state st and started opening covers on South. The 15" pipe on south coming from the west side towards may st showed no signs of increased flow and is therefore assumed to have minimal stormwater coming from it. The pipe on the east side showed a large increase in flow. Following that up the street we confirmed that it was coming from the Bradbury Extension sewershed. We confirmed through dye testing that the basins in that area are indeed connected to the separated sewer on South st. This section of south st dead ends at Bradbury and the only line coming in was a drop in from Bradbury. At this point we have confirmed that the excess water that is overwhelming the sewer on state must be coming from this area. While it was still raining, we temporarily plugged 5 catch basins on Mason/Bradbury while we monitored the manhole in front of 23 state. While the line did still surcharge, it did not fill to the point of going back into the house. Removing this flow looks to be enough to alleviate the problem for a typical rain event. Flooding in the area we had blocked the basins on was not ideal, (closed road) but did not seem to cause any immediate issues. Not a long term solution though. When I discuss this with Jeff, my recommendation is going to be that we:

1. Temporarily reinstall cross connection on State between MAN00056 and FCB00048 to lessen the chance of a backup during sever rain event and provide short term protection to the property.
2. Install meter on cross connection to record flow and level. If DEP agrees, this volume would get added to the volume measured at Cutt/Bradbury CSO and used from reporting flows from CSO#4.
3. Notify DEP of plan to get their buy in and input.
4. Install flow restrictors on Mason/Bradbury CBs to slow flows.
5. Add State st to our list of monthly trouble spot cleaning to deal with the large amounts of grease and trash **IF**
    a. Building owner works to educate tenants to stop flushing things that contribute to backups
    b. Building owner Installs and maintains backflow devices
6. Make separating sewers on Bradbury and any contributing streets a high priority project to be completed in the next few years

More data is needed (we will be tasking rob with studying this area as his next priority), but I feel that if we can remove the drainage that flows down Bradbury, this section of South st will be truly separated including all upstream connections. We can then permanently close the cross connection on State and be confident that any backups that happen in the future will be due to people flushing things they should not. I won't be taking any action on this until Jeff, Tom, and Craig are all in agreement on the next steps.

3/31/20 – 23 State St. Property Manager Chris 603-973-3966. Received a call from Tanner in the afternoon on a sewer backup call. I was already at home, so Joey Lovejoy deal with the issues. His notes:

On Wednesday 03/31/2021 at 16:50 P.D. Called. They advised a private company was doing some sewer work and claiming there is a backup traced to the city line. I was on scene by 17:00 and the

manhole in the middle of the road was very high. Private contractor that at 12:00-13:00 it was actually 8-10” higher in the parking lot, but has since gone down. When opening manhole just past #24 State it was empty and almost no flow at all. Tanner and lance were called in. Tanner brought vactor and Lance was in unit #4. Lance arrived first and and traced lines on Ipad and advised they have been to this address in the past for a issue in the parking lot. Tanner came and we jet rodded from the basin to basin and Tanner said they were about 62’ basin to basin but hit a blockage around 55ish feet. When it started to flow there was piles of cigarettes (and I mean piles!). There were piles of rags, grease and many other things that should not be flushed. In 5 minutes downstream from where jet rodder entered there was a pile of debris big enough to have to suck it out so it didn’t clog again. Jeff spoke with property manager and 2nd in charge. They both advised several units had 3/4” of water on the floor. I did notice some gravel in one of the manholes, and there is a patch in the parking lot where a obvious connection has been made at one point. Its still a distance from the manhole in the street and I had heard there has been issues with that line. We did ask the Property manager and 2nd in charge to please educate on some of these things being flushed because they are going to keep creating issues. There was some serious piles of stuff in this line. Jeff Demers suggested that they install a backflow device to avoid future backups.
Property Manager- Chris 603-973-3966
Private Contractor on site- Justin with Northeast Drain

Alex Buechner
City of Biddeford
Wastewater Superintendent
O: (207)-282-1350
C: (207)-205-0469
Alex.buechner@biddefordmaine.org