To: John Melcher
Water Technical Enforcement Unit
Office of Environmental Stewardship
US EPA, Region 1
5 Post Office Sq. – Suite 100
Boston, MA 02109

From: Gerald Valentine

RE: Bypass from CSO-031, New Haven, CT

July 15, 2015

Dear Jack,

I am providing the following information to enhance my initial citizen's complaint from August 12, 2013. Specifically, I hope to convince you that on August 10, 2012, the geyser of effluent observed flowing onto the roadway and into the Under Air Rights Garage represented an unreported bypass event. Furthermore, the geyser that was captured on video likely documented CSO-031 behaving as a *combined sewer outfall* that discharged mixed storm water and sanitary sewage into an unauthorized location in violation of MUNCIPAL NPDES PERMIT – CT0100366.

It is unlikely that this bypass event would have occurred had the GNHWPCA complied with their obligations under the New Haven Long-Term Combined Sewer Overflow Control Plan – 2001 to monitor and ultimately abate the recurrent roadway flooding at this location by constructing a storage tank to contain such overflows until they could be safely conveyed to the designated water treatment facility.

As presented herein, I allege that the GNHWPCA has engaged in repeated acts of omission and commission that provided regulatory authorities, the City of New Haven, private contractors and the public, specious information regarding the functional status and connectivity of CSO-031 before, and up to, the closure of CSO-031 as reported to your office.

I believe that the GNHWPCA's malfeasance through non-compliance with the New Haven Long-Term Combined Sewer Overflow Control Plan – 2001, by violating multiple sections of their NPDES PERMIT – CT0100366 and by providing false information in their GNHWPCA Annual Progress Report under Consent Order WC5509 represents a disquieting pattern of behavior that may reflect larger problems within the GNHWPCA's governance.

If my assertions are substantiated, it is my sincere hope that they materially impact the conditions under which the NPDES PERMIT is renewed and that relevant resources within the EPA's jurisdiction ensure accountability of all responsible parties at the GNHWPCA.

Sincerely,

Gerald Valentine, MD
Hamden, CT

1. August 10, 2012 video of sewer overflow from manhole onto roadway in the vicinity of CSO 031

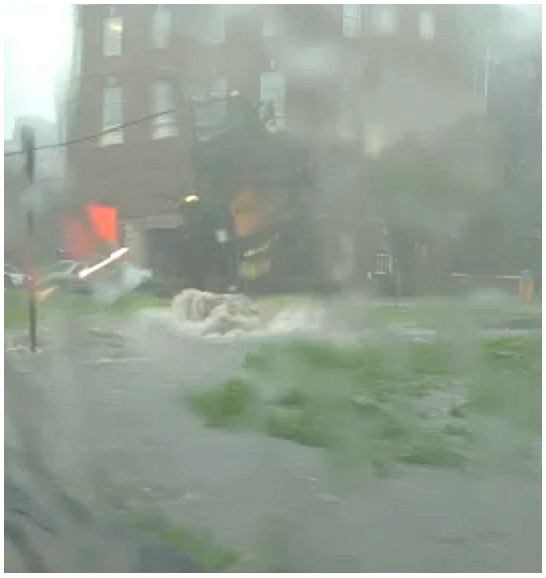


Fig. 1: An image from the Perez video taken from the front seat of a car as it approached the Roundabout from the UARG exit. The stream of turbid water in the foreground is running into the UARG. The geyser is seen in the distance.

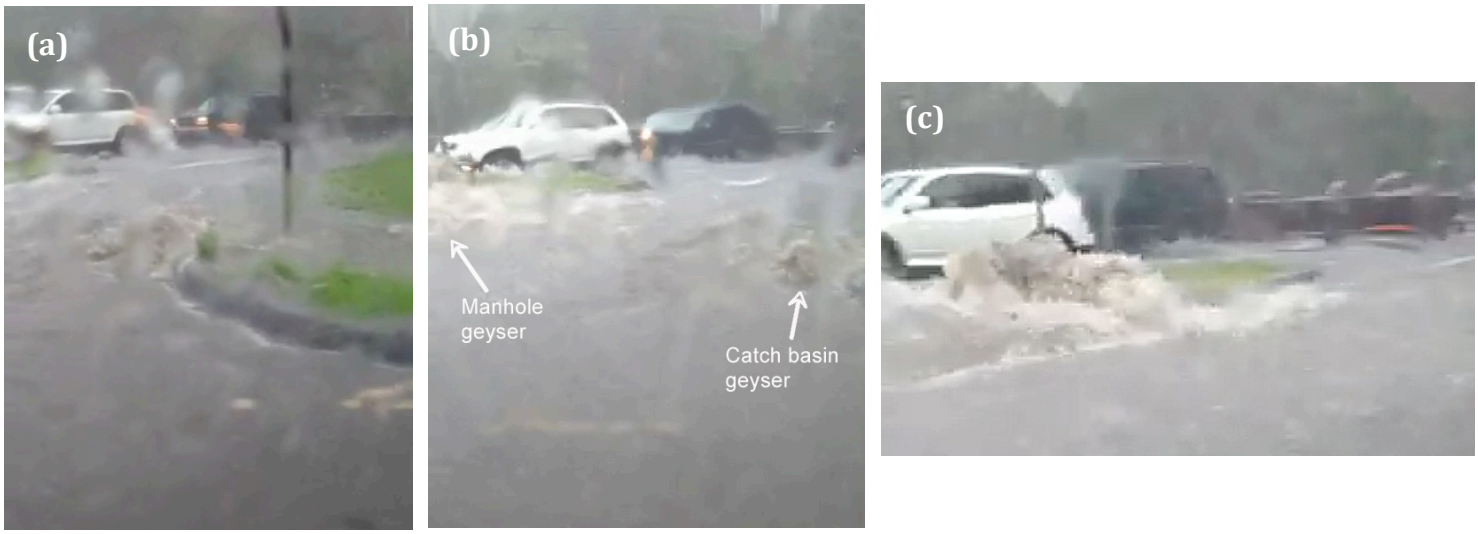


Fig. 2: As the car moves onto the Roundabout, Perez initially focuses his camera on the effluent from a catch basin along the curb (a), then (b) quickly moves the camera to (c) a geyser erupting from the grassy median.

Fig. 3: A sequence of images illustrating the location and force of the geyser. The prodigious amount of effluent from the geyser compelled Mr. Perez to capture it on video. Please note the apex of the grassy median. As described below, this is an important landmark for identifying the precise surface location of the August 10, 2012 geyser.

2. **Aerial view of the surface location of the August 10, 2012 geyser captured in the Perez video.**

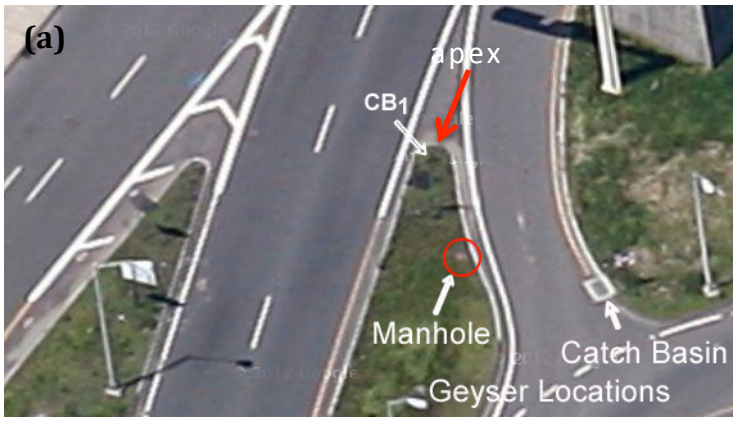


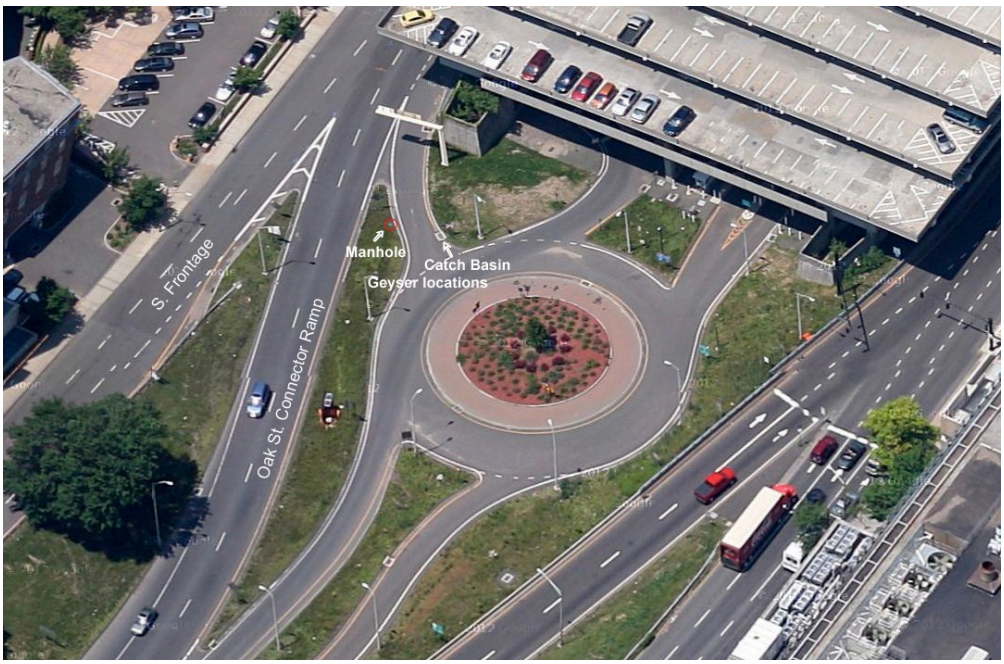
Fig. 5(a): An aerial view with the geyser location circled in red. This manhole will be referred to as the MH $_{Geyser}$ hereafter. The MH $_{Geyser}$ is located in a grassy median that separates the Roundabout and the Oak Street Connector Ramp. The manhole at the apex of the median (CB_1) is an additional critical landmark for supporting the assertions made in this complaint.

5(b): Please note the relative locations of the MH $_{Geyser}$ and the catch basin to its right that also overflowed August 10, 2012 [see Fig 2(a,b)].

Fig. 4: Aerial view of the ingress and egress of the Under Air Rights Garage (UARG) and its associated Roundabout as they were configured on August 10, 2012.

The MH $_{Geyser}$ is circled in red.

The catch basin that overflowed on August 10, 2012 is indicated with a white arrow. Under normal conditions, it drains into the junction at the MH $_{Geyser}$ location



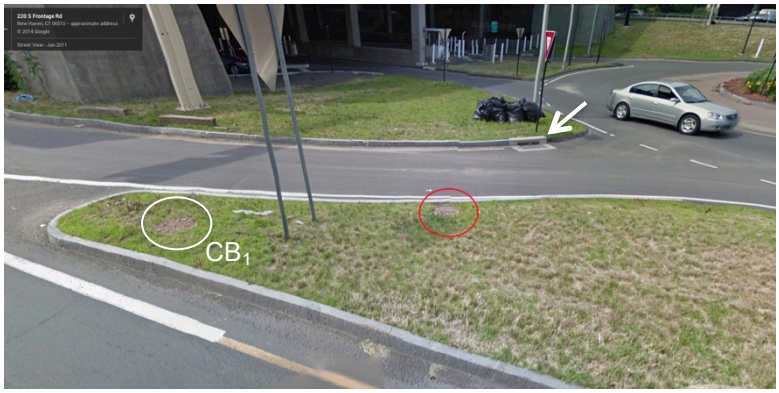


Fig. 6: The MH $_{Geyser}$ (encircled in red) within the grassy median and its associated catch basin (white arrow) as seen from the Oak St. Connector Ramp looking back toward the UARG exit. CB_1 is located at the apex of the median.

In this image, the silver car on the Roundabout is in a location similar to the vantage point of the Perez video on August 10, 2012.

The video footage from August 10, 2012 shows effluent emanating from the MH $_{Geyser}$ and its catch basin, but much more voluminously from the MH $_{Geyser}$.

3. **The MH $_{Geyser}$ is absent from the Greater New Haven Water Pollution Control Regulator 031 / July 2013 Map**.

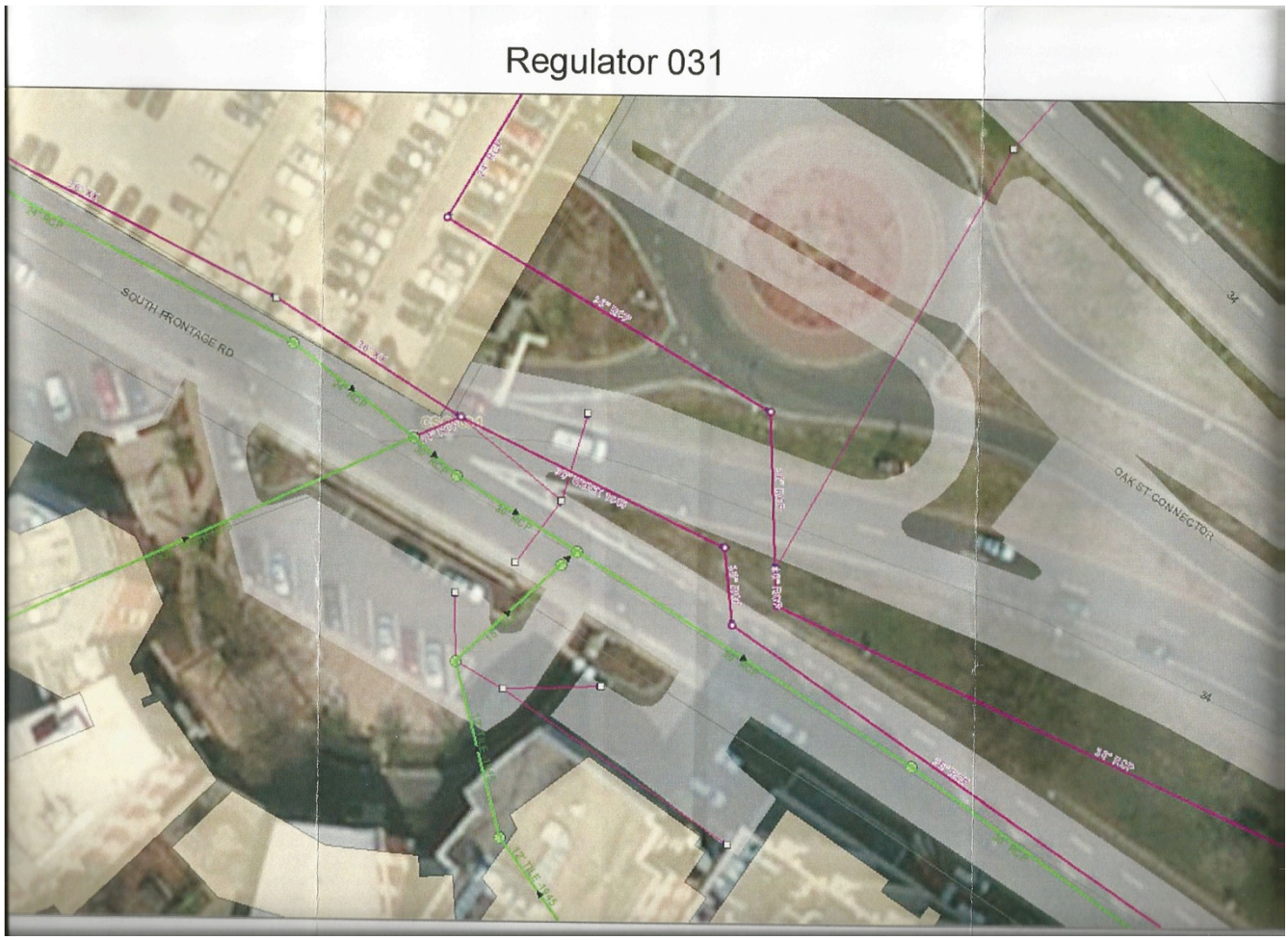


Fig. 7: A sewer map of Regulator 031 prepared by the GNHWPCA. This map was provided to me in July 2013 after a meeting about the functional status of CSO-031 at the GNHWPCA's engineering office.

The absence of a designation for, or identification of the MH $_{Geyser,}$ implies that the MH $_{Geyser}$ is not connected to any sewer structures comprising CSO-031.

This complaint intends to provide sufficient evidence for the assertion that the map depicted in Fig. 7 is inaccurate. I assert that the MH $_{Geyser}$ location was in fact a manhole providing access to the junction of CSO-031 and the separate storm water system into which CSO-031 discharged for ultimate conveyance to New Haven Harbor. It would therefore be an important structure to identify as part of Regulator 031.

To the best of my understanding, the only legally permitted location for sewage discharge from CSO-031 during rainfall events is the New Haven Harbor (MUNCIPAL NPDES PERMIT – CT0100366). However, due to the well established insufficiency of both the combined sewer and storm sewers in the area, and due to the failure of the GNHWPCA to abate the problem of recurrent roadway flooding at CSO-031 as occurred on August 10, 2012, it remains my contention that the flooding into the UARG on August 10, 2012 included bypass that was discharged from the MH $_{Geyser}$.

In effect, the MH $_{Geyser}$ location acted as a *combined sewer outfall* under the rainfall conditions of August 10, 2012.

To support this assertion, I will provide an alternative description of the dynamics and configuration of Regulator 031 / CSO-031 on August 10, 2012. This alternative configuration was constructed from a variety of different sewer maps of the target area that were prepared at different times and for different purposes and agencies.

4. **1956 Sewer Map created prior to installation of CSO-031.**

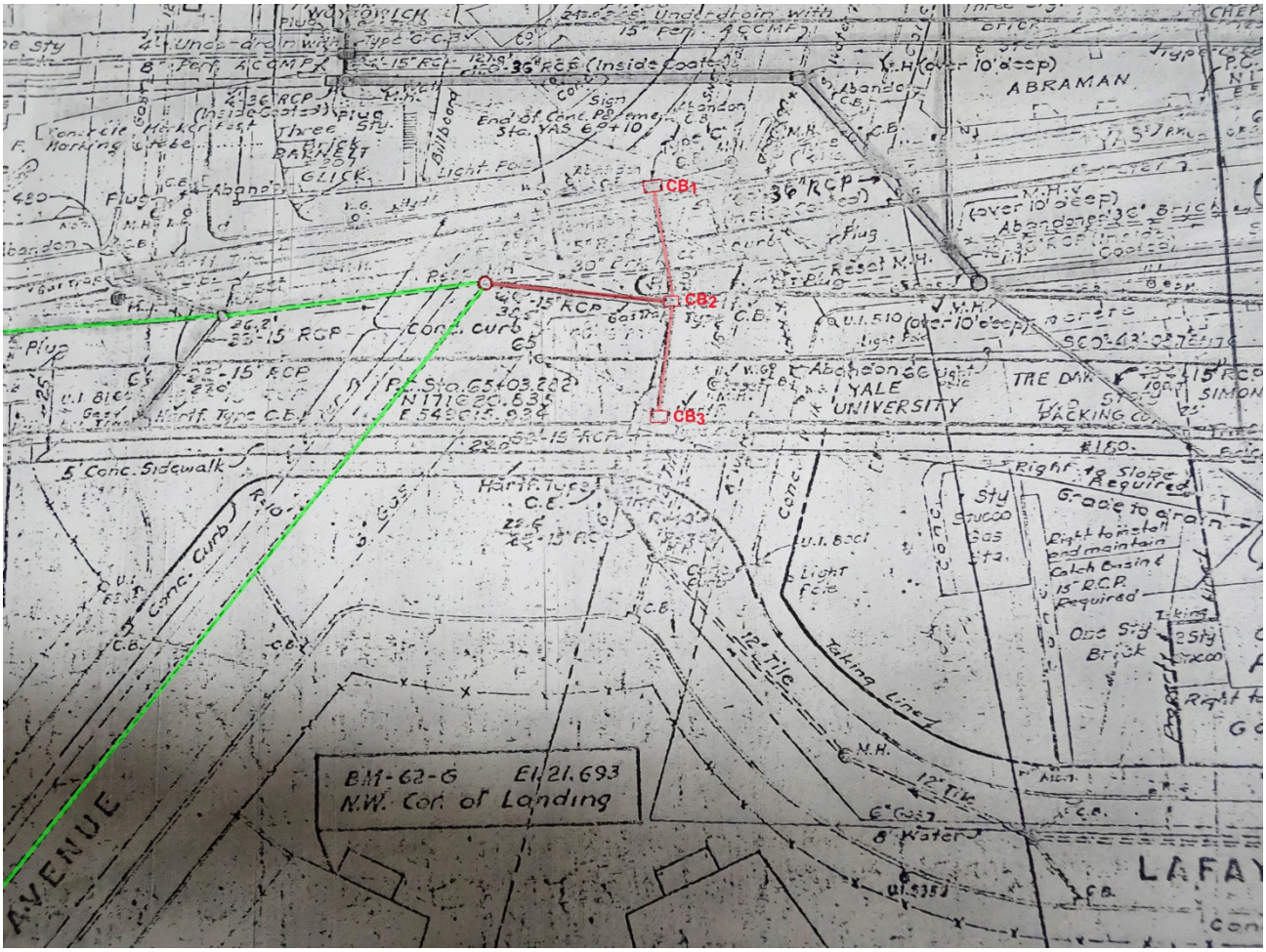


Fig. 8: A June 5, 1956 map of the area around CSO-031. This map was drawn at an early stage of the Route 34 Relocation Project. It is presented to provide a historical context to several key sewer structures in the vicinity of the *to-be-built* CSO-031.

Key Points:

1. The green lines represent 24" combined sewer lines that were constructed, at least in part, in the 19th century and meet at a combined sewer junction that was later incorporated into CSO-031.

2. The red-shaded 'triad' of catch basins drains through a single collector pipe to the junction of combined sewer conduits. This CB triad provides important landmarks for understanding the history of modifications to the drainage system around CSO-031. Therefore, this map has been annotated with the designations CB_1, CB_2 and CB_3 for the catch basins of the triad to clearly demarcate these landmarks for future reference.

3. Please note that an overflow between the green combined sewer system and a separate storm water system at this junction is not depicted because CSO-031 had not been constructed when this map was drawn.

5. **City of New Haven planimetric map depicting CSO-031 prior to the construction of the Air Rights Garage.**

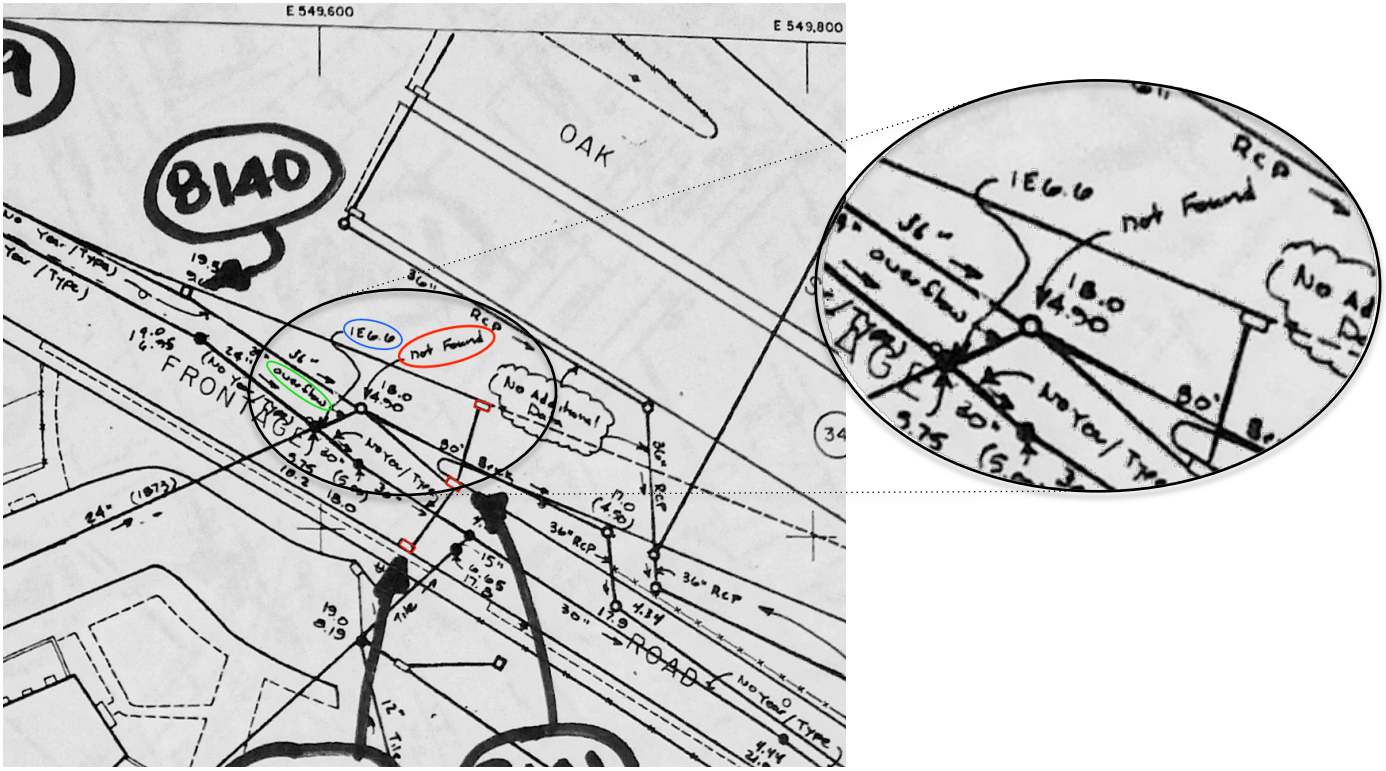


Fig 9: A section from a Planimetric Map produced by City of New Haven, Bureau of Engineering containing the area around Regulator / CSO 031. The legend of this map did not contain a date. However, because the Air Rights Garage (ARG) is not depicted on this map, it likely predates 1983 (the year of the ARG's construction).

Key points:

1. A cross-connection between the combined sewer system (24" [1873]) and a separate parallel storm water system is identified as '**overflow**' (circled in green). PLEASE NOTE: This overflow is drawn in a similar manner on the GNHWPCA Regulator 031 / July 2013 Map (see Fig. 7).

2. The manhole at the junction of the overflow with the separate storm sewer system is identified as '***not found***' (circled in red).

3. The CB triad drains into the junction at the '***not found***' manhole.

4.The manhole located at the inlet to the overflow has a rim height of 18.2 and an INV of 5.75.

5. The 'IE 6.6' designation (circled in blue) specifies the invert elevation of the weir at the inlet to the overflow. As seen below, this 6.6 invert elevation is the weir elevation identified for CSO #31 in the City of New Haven's May 14, 2014 response to USEPA Request for Information, EPA Docket No. 14-308-06 dated February 13, 2014.

J41	5.80	11.60	LOWEST CB INSIDE UARG (TOP ELEV. 11.60)
J42	3.70	23.50	SOUTH FRONTAGE ROAD MANHOLE
J43	4.90	18.20	CSO REGULATOR #31: OVERFLOW WEIR ELEV. 6.60
J44	10.93	15.40	CB ON TEMPLE ST/GARAGE (TOP ELEV. 15.40)

6. **GNHWPCA sewer map (July 2013) depicting CSO-031.**

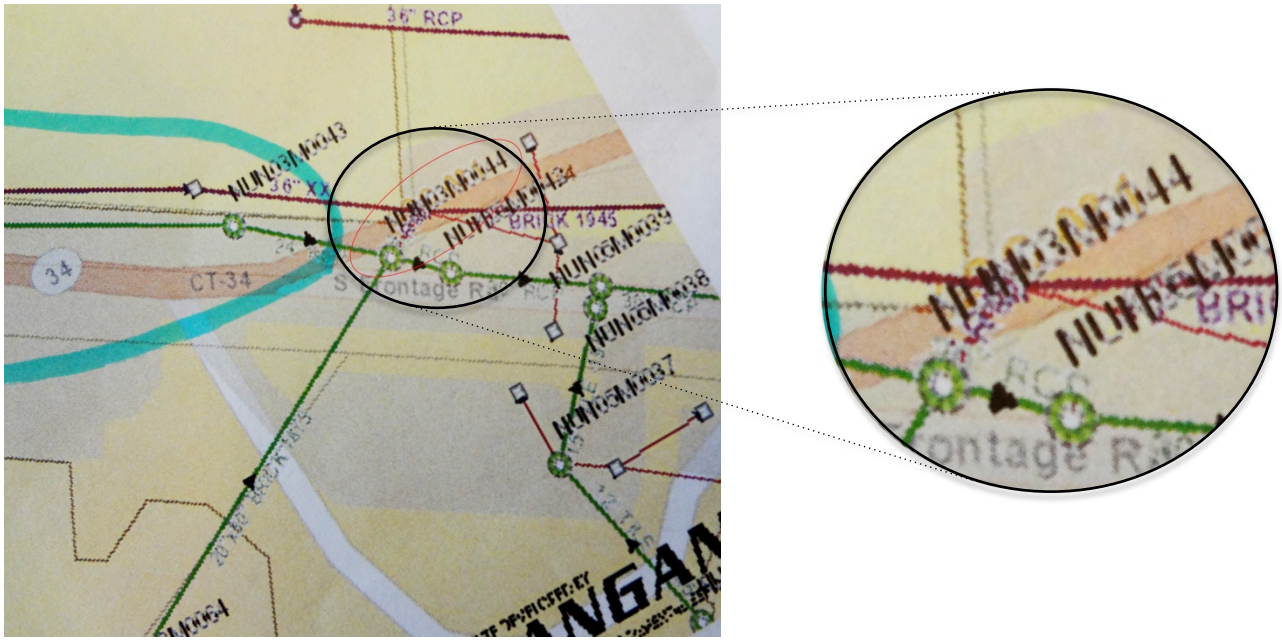


Fig. 10: CSO-031 as depicted in a GNHWPCA Sewer Map provided to us in July 2013.

Key Points:

1. This section of the map corresponds closely to the Planimetric Map presented above (see Fig 9).

2. However, the '***not found***' manhole is now obscured by the NUN03M0044 manhole designation. The basis of this obfuscation is unclear. Of the forty-seven different 'NUN0XM00XX' designations on the entire July 2013 GNHWPCA Sewer Map, this NUN030044 designator is the only one that obscures an underlying key sewer structure. Even when manholes and catch basins are tightly clustered in other areas of the map, the MH designator numbers are positioned so as to retain clarity of the underlying structures.

At higher magnification (image to the right), the '***not found***' manhole is no longer identified.

3. In addition, the overflow and CSO-031 designations are no longer clearly delineated as in Fig 7.

4. ***Please recall that CSO-031 was in an active configuration at the time this map was produced***. The act of obscuring CSO-031 on the map did not change the underlying physical reality of an active CSO-031 at the time of the August 10, 2012 flooding, i.e. - '*The map is not the territory*'.

5. The MH $_{Geyser}$ is again absent on this map.

In contrast to the GHNWPCA Sewer Map (Fig. 10) and the GNHWPCA Regulator 031 map (Fig. 7), many other sewer maps that were prepared to guide construction in the area contain several key discrepancies. As will be described below, a highly significant discrepancy is the sewer connectivity of the MH $_{Geyser}$.

7. **Construction map (2012) with a discrepant description of the storm sewer outside the Air Rights Garage.**

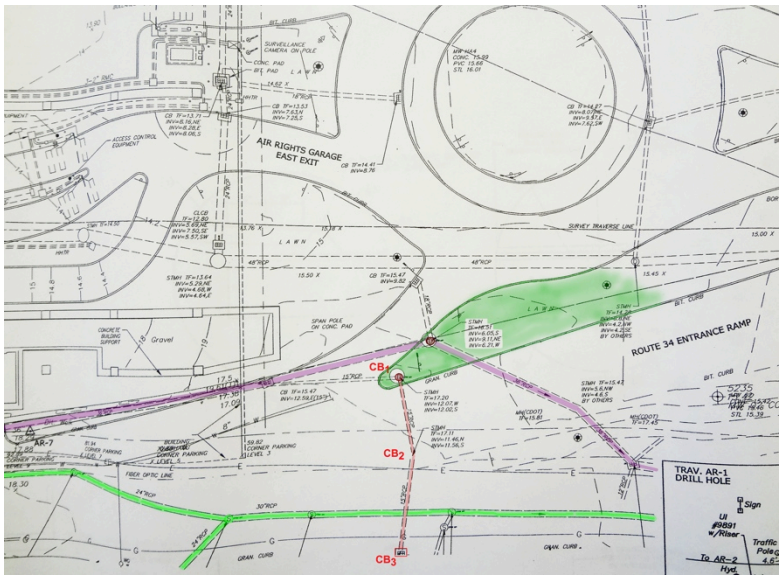


Fig. 11: A map dated May 22, 2012 prepared to guide construction of a new Entrance Ramp within the Under Air Rights Garage. (Annotated, but not modified.)

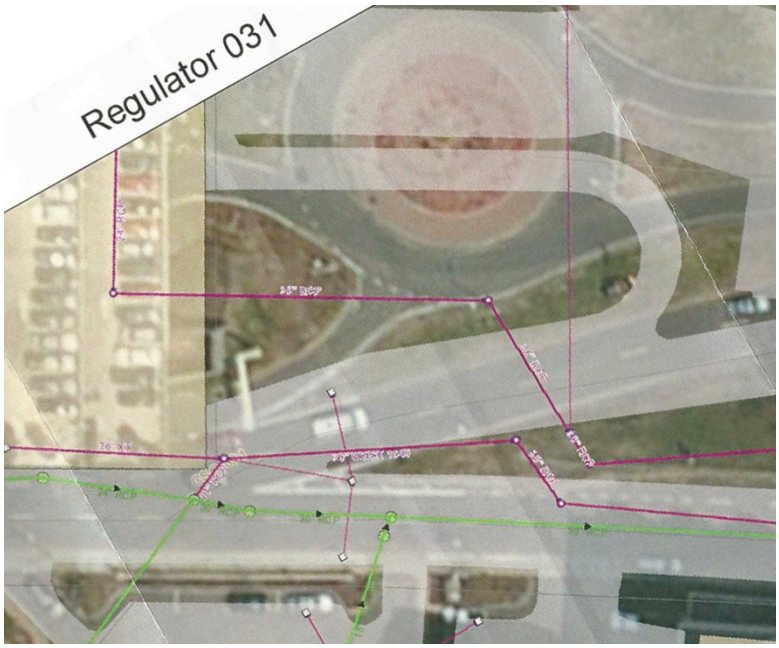


Fig. 12: A section from an unmodifed July 2013 GNHWPCA map that corresponds to the May 22, 2012 construction map above.

Four **key differences** between the May 22, 2012 construction map (Fig. 11) and the GNHWPCA's representation of CSO-031 as depicted in their Regulator 031 Maps (Figs 7 & 12) are:

1. The 36" RCP storm water drain (purple) along the southern border of the ARG connects to a manhole at the exact location of the August 10, 2012 geyser (MH $_{Geyser}$) instead connecting to a '***not found***' manhole (Fig. 9).

2. The construction map *does not include* the overflow at Regulator / CSO-031. As has already been established, CSO 031 was active in May 2012. It is unclear why the overflow at CSO-031, a highly significant sewer structure requiring abatement due to recurrent roadway flooding as described in the 2001 New Haven LTCSOCP was not depicted. Updated flow data and estimates of overflow frequency for CSO 031 (see CH2MHILL Technical Memorandum-Task H6, May 5, 2008) were available when this 2012 construction map was drawn.

3. The drainage conduit for the catch basin triad is no longer connected to the '***not found***' manhole [as in the Planimetric Map (Fig. 9) and in the GNHWPCA Regulator 031 / July 2013 Map (Fig. 7)]. In fact, the drainage from this triad of structures is not identified at all. From this map, it not possible to determine how drainage from CB_3 and the lateral catch basin with an INV=12.59 extending from the CB_1 location is accomplished.

4. The catch basin CB_1 of the triad is now depicted as a manhole (STMH TF=17.2 INV=11.46N). This reflects the sewer modification that was made during the construction of the Roundabout in 2007-08 that converted CB_1 into a manhole (see Fig 6).

8. **An additional construction map (2012) that lacks a depiction of an active CSO-031.**

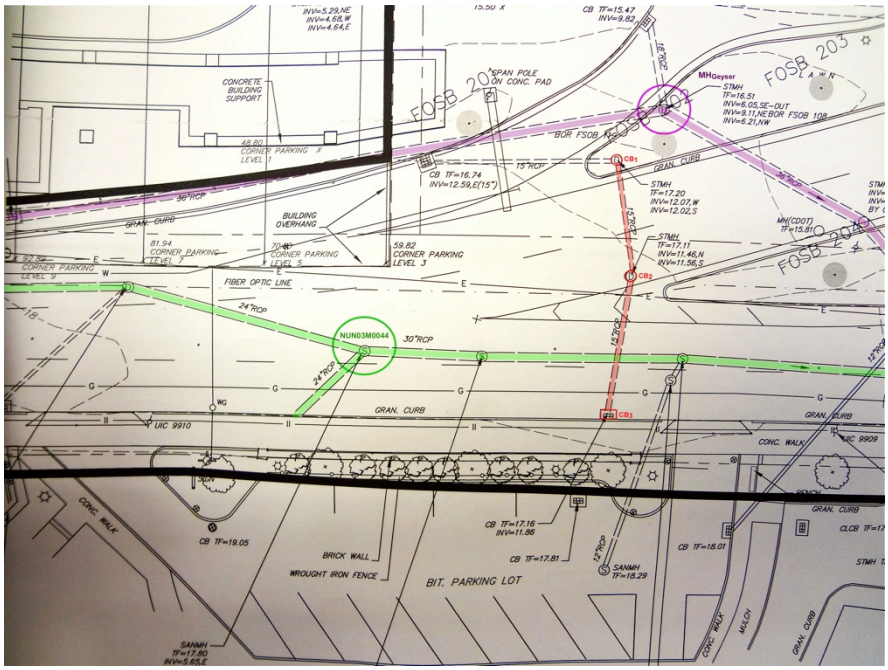


Fig. 13: An annotated 2012 map entitled '*100 College Street Existing Conditions Plan – Drawing Number EXC-101*'.

Fig. 14: An enlarged section of the GNHWPCA Regulator 031 map that corresponds to the map presented above.

1. In Fig. 13, the MH $_{Geyser}$ is again connected to the 36 " RCP separated storm water system instead of the '***not found***' manhole (Fig. 9). The inverts are listed as 'INV=6.05, SE / INV = 9.11, NE / INV=6.21, NW.
2. Again, in Fig. 13, CSO-031 is not depicted or even suggested despite the fact that the overflow between the combined sanitary system and the storm water system was active when this map of *existing conditions* was created. Fig. 13 has been annotated with CB_1 - CB_3 designators for orientation. The manhole designator NUN030044 was added for locating the 6.6 weir of CSO-031 as reported to the USEPA.

Collectively, these data indicate that the GNHWPCA Regulator 031 / July 2013 Map (Fig. 7) and the GNHWPCA Sewer Map (Fig. 10) are incomplete because a precise location of the manhole located at the junction of the overflow and storm water system (i.e. the '***not found***' manhole) is not identified. However, these GNHWPCA maps do depict a cross-connection between the combined sanitary system and the separate storm water system at CSO-031, although in an increasingly vague way over time. Likewise, the 2012 sewer maps drawn for construction in and around the Air Rights Garage are also incomplete. While these maps identify the location and connectivity of underlying sewer structures at the MH $_{Geyser}$, the cross connection at CSO-031 is not represented, even though it was active when these maps were created. Furthermore, the drainage conduit for the CB triad is not depicted in these 2012 maps. To understand the probable configuration of the sewer structures comprising CSO-031 as they existed on August 10, 2012 when sewage effluent from the MH $_{Geyser}$ was filmed, a revised map that harmonizes these various maps is needed.

9. **Proposed sewer map of CSO 031 at the time of alleged sewage bypass on August 10, 2012.**

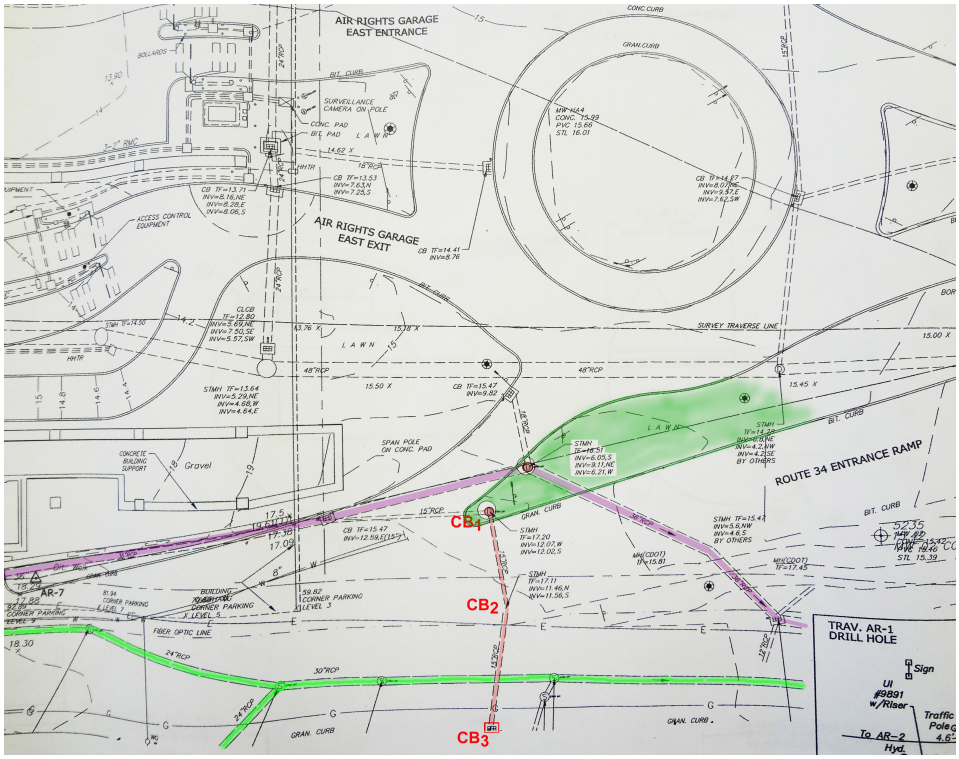


Fig. 15. Duplication of the May 22, 2012 map shown in Fig. 11 above. (Annotated but connectivity not modified)

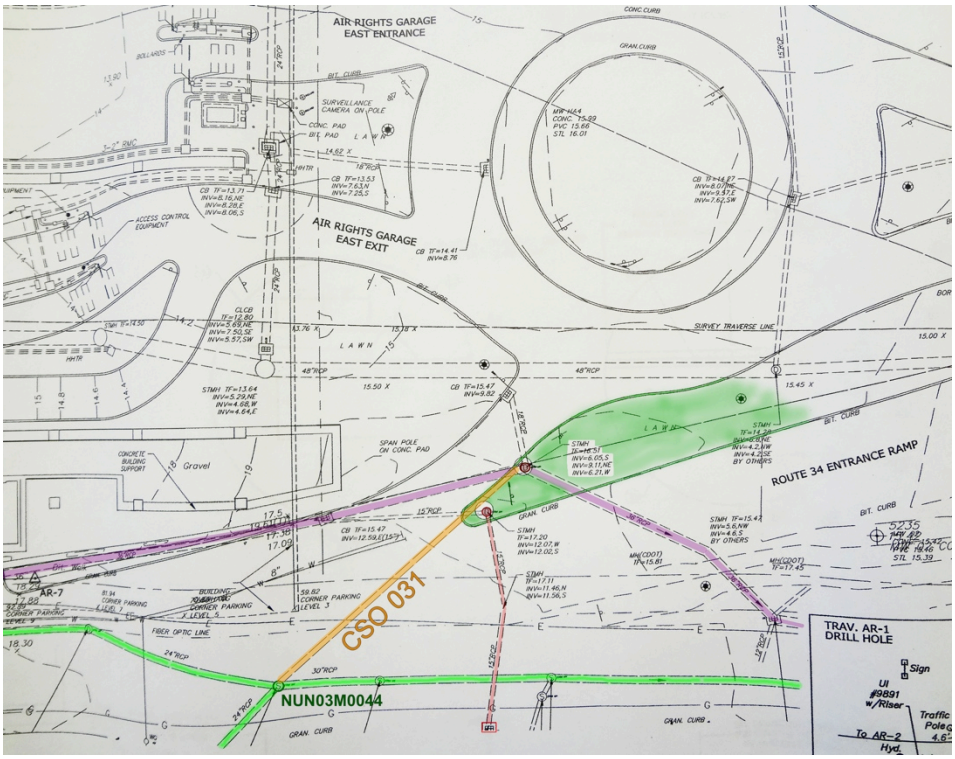


Fig 16. A modified May 22, 2012 map that now includes CSO 031. (Annotated with modified sewer connectivity)

Based upon the data presented hereto, the modified map presented in Fig. 16 represents a plausible configuration of CSO-031 on August 10, 2012.

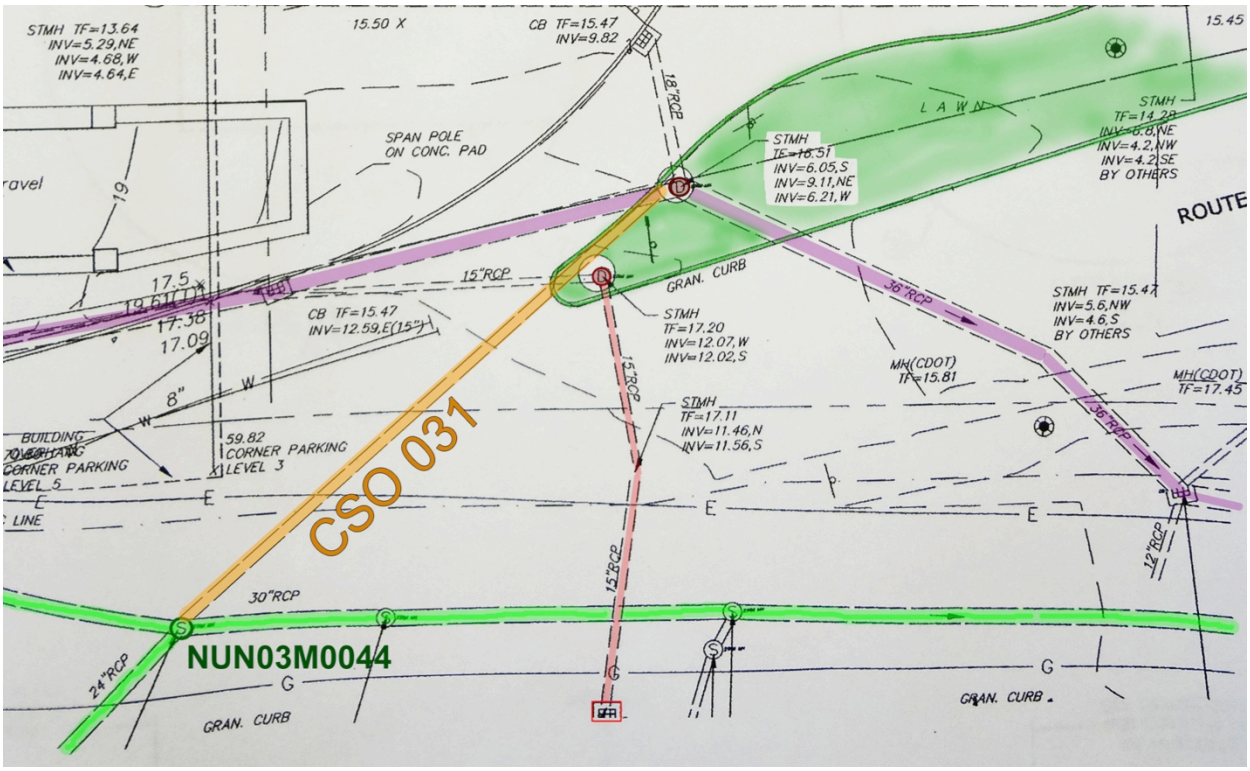


Fig 17: Proposed configuration of CSO-031 on August 10, 2012.

The **key features** of this modified map are:

1. The storm water 36" RCP running along the southern edge of the Air Rights Garage connects to the MH $_{\text{Geyser}}$ located in the grassy median. This grassy median was built during the Roundabout construction in 2007.

2. The storm water drainage does not include a connection to *a non-localizable manhole* in the S. Frontage Road (as previously depicted in Fig 7, Fig 9 and Fig 12).

3. The cross-connection from MUN03M0044 (with an IE 6.6) has been extended to the MH $_{\text{Geyser}}$ location instead of the '***not found***' manhole that was literally 'covered-up' on the GNHWPCA Sewer Map (see Fig. 10).

4. CB_1 and CB_2 of the catch basin triad are correctly depicted as manholes and not catch basins as in the GNHWPCA maps (Fig. 7 & Fig. 12).

5. The drainage of the CB triad remains indeterminate. Once the '***not found***' manhole is localized to the median, depicting the connectivity of the pipe draining the catch basin triad becomes problematic. This may explain why the drainage of the CB triad is no longer even represented.

This reconfigured Regulator / CSO 031 map (Fig. 17) can now be used to test some predictions.

Prediction 1

Prior to the construction of the Roundabout in 2007, the MH $_{Geyser}$ and CB_1 should be identifiable in the roadway of the old Oak Street Connector.

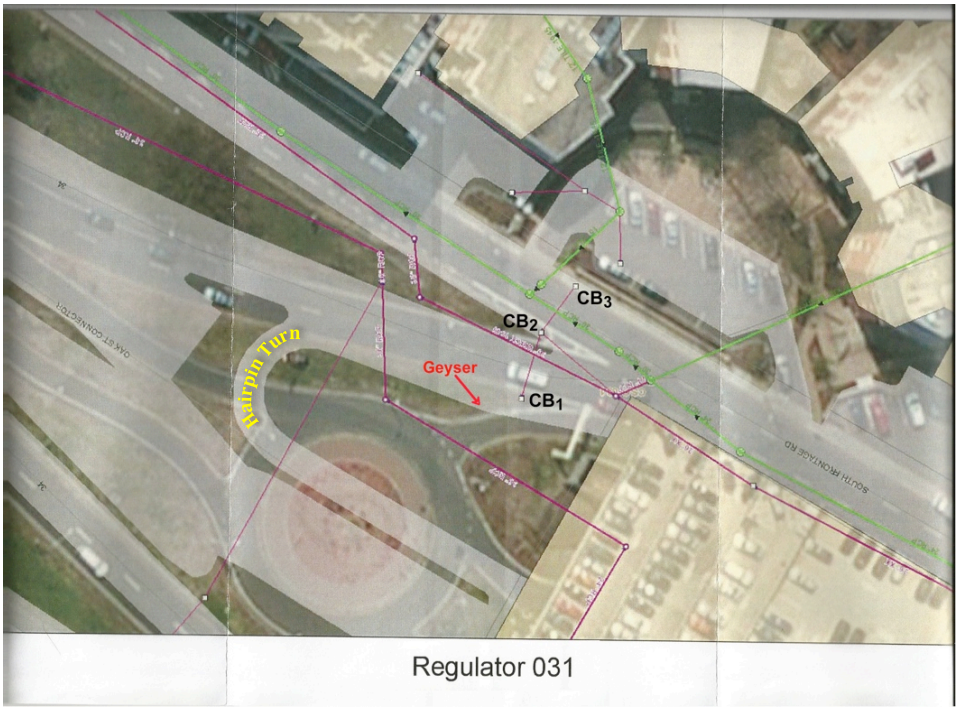


Fig. 18: The GNHWPCA Regulator 031 / July 2013 Map includes a gray-shaded overlay of the hairpin turn into the Under Air Rights Garage. The overlay presents the roadway configuration prior to the Roundabout construction in 2007 relative to post-construction structures. On this annotated map, the precise location of the MH_{Geyser} is highlighted to demonstrate that this manhole would be located near a catch basin (CB_1) and ***in the roadway*** near the curb along the old Oak Street connector ramp prior to the Roundabout

Evidence supporting Prediction:

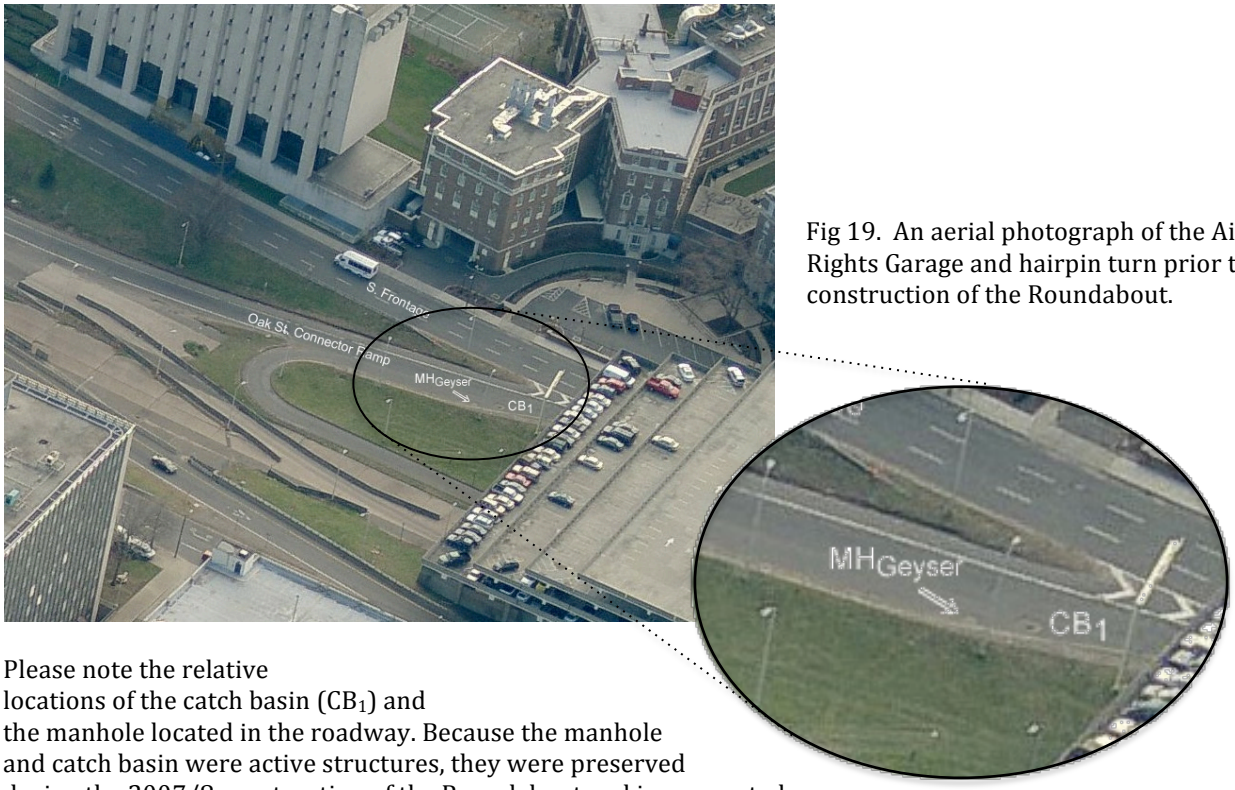


Fig 19. An aerial photograph of the Air Rights Garage and hairpin turn prior to the construction of the Roundabout.

Please note the relative locations of the catch basin (CB_1) and the manhole located in the roadway. Because the manhole and catch basin were active structures, they were preserved during the 2007/8 construction of the Roundabout and incorporated into the grassy roadway median. The manhole at this location is the MH_{Geyser} and the catch basin is CB_1 of the catch basin triad (subsequently converted into a manhole at the apex of the grassy median during the Roundabout construction).

Prediction 2

The MH $_{Geyser}$ located in the grassy median would be involved in the closure of CSO-031.

Please note that this prediction could only be made once a composite map that includes the correct location of the intersection between the CSO-031 outlet and the separate storm sewer is drawn.

It would not be predicted from information provided on the GNHWPCA maps, or from the information contained in the CNH's and the GNHWPCA's responses to the February 13, 2014 Request for Information, EPA Docket No. 14-308-06.

Evidence supporting Prediction:

GNHWPCA
Protecting the Environment

Work Order ENG-63968
Engineering
Printed 8/6/2013 - 1:19 PM (Duplicate Copy)

Maintenance Details

Requested By: Di Monaco, Luigi on 7/25/2013 11:17:00 AM
Taken By: Di Monaco, Luigi
Problem: Combined Sewer Overflow Related To Wet Weather (CSO EVENT)
Procedure: Stick Camera Inspection (STK_CAM)

Target: 8/24/2013 (1) hr
Priority/Type: Normal / Inspection
Supervisor: Sgroi, Tom
Shop: ON-CALL

New Haven
Union
UN-03
UN-03 Manholes
NUN03M0044 (NUN03M0044)

Contact: Di Monaco, Luigi
Phone: (203) 466-4182

Reason: Emergency Stick Camera Investigation of SMH# NUN03M0044 (NUN03M0044), Need confirmation of OF 031 Abandonment South Frontage Road, New Haven

Labor Report

Completed: _____ **Failure:** /_____

Report: On Thursday morning Luigi contacted me and asked me if I could have the collection crew stick camera the manhole that Fucci just uncovered behind the jersey barrier at the old on ramp to the Oak Street Connector. Luigi also asked me when I get the photos if I could send them to him. I contacted Rich Nasse (O.M.I.) and asked him if he could have his crew stick camera that manhole, he told me that he would send the crew out as soon as possible. Later that afternoon Rich e-mailed me the photos that they took, and told me that the manhole was live and was not bullheaded. I called Luigi and told him the same and added the photos to this work order and sent them to his e-mail also.

Jim Zarro

Fig. 20. GNHWPCA Work Order ENG-6396.

This work order was requested on July 25, 2013 due to the problem of a

> "*Combined Sewer Overflow Related To Wet Weather (CSO EVENT).*"

As described in the Labor Report section of this work order, a confirmation of the abandonment of OF 031 (i.e. CSO-031) South Frontage Road, New Haven, required the collection crew to:

'*stick camera the manhole that Fucci just uncovered behind the jersey barrier at the old on ramp to the Oak Street Connector.*'

Fig. 21 (a): A photo taken in July 2013 of the jersey barrier at the old on ramp to the Oak Street Connector described in GNHWPCA - Work Order ENG 63968 (Fig. 20).

Fig. 21 (b) Manhole cover at the geyser location.

Fig. 21 (c) Manhole cover at the tip of the median that was formerly a catch basin (i.e. CB_1 of the 'CB triad').

Please note that Work Order ENG 63968 also notes that *the manhole that Fucci just uncovered behind the jersey barrier* was

"… live and not bullheaded."

On July 26, 2013, one day after '*the manhole that Fucci just uncovered behind the jersey barrier'* was identified during the act of confirming the abandonment of OF 031, the GNHWPCA issued Work Order COLL-64014.

JR 12-17-2013

GNHWPCA
Protecting the Environment

Work Order COLL-64014
Collections
Printed 12/17/2013 - 6:49 AM (Duplicate Copy)

Maintenance Details

Requested By: Nasse, Rich on 7/26/2013 10:48:00 AM
Taken By: Nasse, Rich
Procedure: Client Request Work (CLNTREQ)

Target: 7/25/2013 (1) hr
Priority/Type: Normal / Preventive
Supervisor: Nasse, Rich
Shop: GNH

New Haven
Union
UN-03
UN-03 Manholes
NUN03M0044 (NUN03M0044)

Reason: NUN03M0044 (NUN03M0044) CSO #031 MH inspection. MH is located next to MH#NUN03M0044, and is the cso on this line.

Contact: Nasse, Rich
Phone: (203) 410-3490

☐ Warranty ☐ Shutdown ☐ Lockout ☐ Attach ☐ Charge

Labor

Labor	Account	Work Date	Start	End	Reg Hrs	OT Hrs	Other Hrs
Alex, Mark	01.1400.000.50'0	7/25/2013			1	0	0
Wolff, Daniel	01.1400.000.50'0	7/25/2013			1	0	0

Labor Report

Completed: _____ Failure: /

Report: Crew checked the santary and storm MH's to determine if the CSO line was blocked off. The CSO appears to be open.

Fig 22: Work Order COLL-64014 issued following inspection of the manhole behind the jersey barrier performed the previous day (see Fig. 20).

Reason: "*NUN03M0044 (NUN03M0044) CSO #031 MH Inspection. MH is located next to MH#NUN03M0044, and is the cso on this line.*"

Report: "*Crew checked the sanitary and storm MH's to determine if the CSO line was blocked off. The CSO appears to be open.*"

Although the GNHWPCA work orders describe a '*manhole that Fucci just uncovered behind the jersey barrier*' that was also:

1. part of the CSO 031 line, and
2. located next to NUN03M0044,

this 'newly discovered' manhole was never identified by a specific number as is customary for the GNHWPCA.

Furthermore, the surface location of this manhole was not identified in the City of New Haven's Response (5/14/14) to USEPA Request for Information, EPA Docket No. 14-308-06, or in an update on the abatement of CSO-031 that was provided by the GNHWPCA to the USEPA around October 10, 2013 as described below.

On or around October 10, 2013, OF 031 was reported to the USEPA as being bulkheaded and closed.

Ricardo Ceballos

From: Luigi DiMonaco
Sent: Thursday, October 10, 2013 2:26 AM
To: Tom Sgroi; Ricardo Ceballos; Bruce Kirkland; Gary Zrelak; Rick Hurlburt
Subject: OF 031 Bulkheaded and Closed by NWM overnight
Attachments: photo 1.JPG; ATT00001.txt; photo 2.JPG; ATT00002.txt

NWM bulkheaded and closed OF 031 on South Frontage Road overnight. Sanitary manhole was rehabbed.

Fig. 23. These photos were provided by the GNHWPCA to the USEPA as part of the CSO-031 closure performed around October 10, 2013.

To the best of my knowledge, the surface location of the manhole cover for this bulk-headed section of CSO-031 was not provided to the USEPA.

As this complaint demonstrates, the GNHWPCA's incomplete reporting may be due to the fact that the bulkheaded manhole is the MH $_{Geyser}$ in the grassy median *behind the jersey barrier that was uncovered by Fucci* as described in the GNHWPCA's work orders.

If substantiated, it would confirm that the MH $_{Geyser}$ location is part of CSO-031 and that it functioned as a combined sewer outfall on August 10, 2012 with its discharge flowing into a non-permitted location in violation of MUNCIPAL NPDES PERMIT – CT0100366.

Consequently, it follows that this bypass was not reported by the GNHWPCA to regulatory authorities and this lack of reporting is an additional violation of MUNCIPAL NPDES PERMIT – CT0100366.

Prediction 3

In an attempt to abate the public hazard posed by roadway flooding at CSO-031, the manhole cover at the MH $_{Geyser}$ location would be secured in a manner similar to the combined sewer manhole at CSO-034 (site of previous overflow flooding into Temple Street Garage).

Evidence for Prediction

Fig. 24: In this image of the geyser from the Perez video, it appears as if the manhole remains attached despite the tremendous pressure head. Please recall that on page 5 of the **Drainage Report Rte 34 Union Ave, Cardinal Engineering 2012**, the combined sewer manhole at CSO-034 (Temple Street Parking Garage) was blown off by pressure resulting from the inadequate hydraulic capacity of the storm and combined sewers and was therefore *welded shut* in an attempt to minimize roadway flooding. In the case of the manhole at CSO-034, it was welded shut by the New Haven Parking Authority (NHPA) not the GNHWPCA, presumably because it repeatedly contributed to flooding within the Temple Street Parking Garage.

Given that the UARG is also operated by the NHPA and experiences recurrent flooding events, it is plausible that the NHPA (or GNHWPCA) also secured the sewer manhole to its ring / crown at CSO-031 in an attempt to minimize flooding into and around the UARG as has been documented for the attempted abatement of bypass from CSO-034.