

To: Mayor and Council

From: Eric Wojciechowski – Supervisor of Public Works; Municipal Stormwater Coordinator

Date: July 14, 2020

RE: Stormwater Check Valve Report

The Borough of Seaside Park has 4 outfall check valves installed at several locations.

**Location 1: K Street – located approximately 300ft west of the intersection of K Street & Berkeley Lane**

Type: Tideflex Inline Checkmate

Size: 16"

Installation Date: Fall of 2016 by DPW.

Installed on existing outfall #5 (D.I.P. from 2000ish), which is fed by basins catch #35, 36, 37, 38, and 39.

**Limitations:**

- Street elevation at the catch basin 175' to the west, (candidate for additional valve), allows water to bypass this valve.
- Elevation of lot at 144 K Street allows for bypass of this valve.
- Rate of leakage at the valve if present may be equal to rate that tide rises.
- Pipe protrusion through the bulkhead is not water tight
- W/NW wind sloshing water over the bulkhead bypasses the valve.
- Groundwater can be seen running out the ground on extreme high tides.
- Likely groundwater infiltration into the 5 catch basins and 365 linear feet of underground pipe which the condition of, is unknown.
- Hard to get to if obstruction causes valve to not close.
- Installation notes
  - Super low tide water level made this install relatively easy. The clamp did have an issue getting out of round. A replacement clamp is on hand for reinstallation next very low tide.

Overall: This Tideflex valve works most of the time when the above listed limitations are not exceeded.

**Locations 2 & 3: N Street – located at the western end of N Street, north & south sides of the street end.**

Type: (2) Tideflex Inline Checkmate

Size: 12"

Installation Date: July 2017 on D.I.P.by Contractor (Albert Marine) T&M Engineering oversaw this project.

Installed on out outfalls #12 & #13 fed by basins #62 & #63, which are all brand new (pipes and catch basins) as part of the N Street bulkhead project in 2017.

Limitations:

- Pipe protrusion through the bulkhead is not water tight
- Bulkhead is not water tight
- Sloshing of water over and through the bulkhead.
- Elevation of adjacent properties and condition of respective bulkheads
- After pumping down the basin on a very high tide it was found the catch basins are not water tight; water routinely bypasses the valve coming in through the basins floor/walls and pipe protrusion into the basin. Water leaking at valve flap has been observed on several pump down occasions.
- Rate of leakage at the basins & valve, if present, may be equal to rate of tidal rise.
- Landscaping stone of adjacent properties can keep the valves from closing.

Overall: Actual valve performance observation is limited due to above listed factors.

#### **Location 4: M Street & Lake Ave**

Type: WaPro - WaStop S Series

Size: 20"

Installation Date: 11/4/2019 by DPW and WaPro representative.

Installed on outfall #10 (2004) fed by catch basin #31

Limitations:

- Adjacent elevation of property to the south is low.
- Condition of bulkhead on property to the south is deteriorated.
- Catch basin is not water tight.
- Upon pump down test 4/8/2020, on a very high tide we found the outer rim of the valve at the pipe to not be water tight and spewing a significant amount of water bypassing the valve.
- Installation notes:
  - Questionable fastening to achieve water tightness at pipe. Rep felt it was sufficient, I felt it was not, but would observe how well it worked at the next high tide.
    - The next high tides were too high and bypassed the valve completely.
  - Blocking and re-fastening may be required to achieve this.
    - Need very low tide to do this work.
    - We will reinstall with a different fastening and retest. Conditions permitting.

Overall: Actual valve performance observation is limited to the questionable installation. We will re-evaluate after reinstallation.

**SUMMARY:** I think that both valves will work equally well if installed correctly in brand new, water tight basins, brand new water tight pipe, in locations that are not easily bypassed by adjacent elevations.

**NOTE:** Ocean County has a Tideflex valve installed in their outfall at the catch basin on 3<sup>rd</sup> Ave & Bayview Ave. Our observations of this valve have been consistent with our own valves. It is often bypassed by adjacent basins that do not have valves or has deficiencies in the existing pipe and basin and/or the installation.