

Watermain Assessment Study

- **Monroe Ave Watermain Lining**

1. This project I look at as a possible PILOT project. This watermain stretches from the railroad tracks on Monroe to the other side of Freeman Highway. We looked at potentially replacing this line, however, the cost of having to encase 75% of the total footage due to DRBA and DeDOT policy drove the cost up along with it being directional drilled for minimal disturbance. The idea of lining this pipe came up as we've never done it on the potable water side and the fact that only 2 houses (both on Monroe) are served off this line. Doing or scoping a project like this may open the doors to other projects where lining makes more sense than full replacement.

- **Paynter/Dupont/Johnson/Burton and Fourth**

1. Being that this area is in the heart of the City, the thought was that a significant amount of the City's water demand flows through this area. Based on the information provided by GMB, my thought is to look at this as either one large project or several smaller projects. Below is the breakdown:
 - Connect the watermain on 4th Street from Park to Dupont with new PVC (C900) pipe with stubs and valves to each side street (Paynter, Park, Johnson and Dupont).
 - Replace each side street independently or as one large project while analyzing the need for sewer infrastructure repair or replacement and/or stormwater infrastructure. Doing the project street by street may help with funding should the City participate in the paving/rehabilitation of the streets, curb, etc... This would include eliminating the Dupont to Sussex loop which is discussed below and extending an 8" main to the Dupont School to suffice fire flow and pressure requirements.

- **Burton, Fourth and Ocean View Loop / Third and Burton Loop / Bradley and Queen Anne**

1. The watermain that comes down Burton Ave, towards Third St, is currently a dead-end line.
2. The watermain on Bradley, being fed from Fourth, is also a dead-end main.
3. The watermain going down Fourth ends just past Mariners Retreat and doesn't currently tie in at Ocean View Boulevard.
 - The idea behind this project is to eliminate the watermain going across from Dupont Ave to Sussex Dr while creating the 2-3 loops based on the above facts. The two most critical, in my opinion, are the Burton/Third and Fourth/Ocean View. Bradley Ln could also be included as I don't believe there is a lot of infrastructure needed to make that connection at Queen Anne. By eliminating the Dupont to Sussex loop, the BPW doesn't have to deal with access issues

considering what is planned for that area as the district renovates and builds both an elementary and the middle school.

- **New Road (Pilottown to Fourth)**

1. This watermain is crucial to the New Road corridor and as was seen when the tie in took place for the new watermain on Pilottown Road, the pipe is aging and undersized. I think the idea here would be to tackle this as a stand-alone project or in conjunction with the looping above. This is a DeIDOT road which means the costs will probably run high (detours, flaggers, etc...) and the work would need to be done in the "off-season".

- **Pilottown Rd Side Streets (Harborview, Hoornkill, Rodney and Carey)**

1. When the Board took on the Pilottown Project, the scope snowballed into a \$4.5 million dollar water main replacement. As part of that project, we stubbed and connected each side road to the new watermain which allowed us to receive some samples. I can say that where we receive the most complaints is Rodney Ave which is why we have an automatic flusher at the end of the street. With the addition of Fisher's Cove, Rodney will now be looped back to Pilottown Rd and the developer will be installing a "dog leg" main for future looping of Hoornkill. I think tackling these one by one makes the most sense and would allow for proper financial planning/funding mechanisms. I also think they would be combined with future City Street phased project(s), for example Hoornkill Avenue, so that all infrastructure is addressed as one project.

- **School Lane**

1. School Lane has been on the Capital Projects list for several years with the notion of tackling that project in conjunction with a City Streets phase project. This is very old watermain which we have gotten complaints on in the past hence the reason for it being on the horizon.

- **Cedar Street with Side Streets**

1. I see value in economies of scale related to this MASSIVE project and endeavor, but I also understand construction fatigue. I think this project needs coordination across the entire Cedar corridor as it relates to the City and DeIDOT. As we all know, this area floods frequently and with the amount of time, energy, design and money that the Board would invest in this project, we want to make sure we cover all aspects including water, sewer, stormwater, paving, pedestrian lanes, bike lanes parking, etc. Obviously, the Board's focus is on utilities while the rest lands on the City and DeIDOT. All that said, I think there is merit to having an East Market Street corridor project. This area has some of the oldest and most tuberculated pipes. I think tackling and eliminating that while also having a contractor install valving along Cedar will be an efficient approach. That

valving will help isolate areas for replacement when properly located and as we know, the valves in that area have been hit or miss with leaking after exercising.

- **Kings Hwy (Third to Station) and (Station to Wellfield)**

1. One of the biggest projects related to coordination and partnerships is the Kings Highway DeIDOT roundabout project. As a franchise, the Board operates and maintains infrastructure in the DeIDOT ROW. The current design of the dualization will cause access and location issues with watermains, sewer mains and electric infrastructure. The Board needs to decide whether we tackle the Third to Stations work prior to the DeIDOT dualization work. I do feel having a consolidation of watermains (one large 18" / 20" or two 12" mains) would benefit the board drastically vs. have 3-4 mains coming down Kings Hwy from a pure maintenance and simplicity standpoint.

- **Cape Henlopen Drive**

1. Currently, the Board has 2 mains running parallel down Cape Henlopen Drive with multiple cross ties between them. Both are cast iron mains which show signs of their age. Based on the lining project for the Monroe Ave watermain, this corridor may be worth exploring the idea of inserting valves and lining vs. complete main replacement since the crosstie(s) already exist. It could save a lot of money and allow us to do the work while SPI Pharma is down over multiple years for maintenance in the fall.