Responses to CAG questions on Parallel Conveyance

Final Responses submitted to Pratt via email 1/20/2022, with one clarification on 1/24/2022.

Thank you for your questions regarding Parallel Conveyance, relayed to the ESCR team at the September 14, 2021 CAG meeting and through Pratt on September 27, 2021. DEP, DDC, and HNTB-LiRo would like to share the following responses to your inquiries.

1. Do the esplanade's combined sanitary and stormwater outlets (CSOs) need repair?

DEP Response: Sewers within project area were inspected during the design phase. The sewers and outfalls in East River Park were reconstructed due to the raising elevation of the park prior to the ESCR Project. Other outfalls will be replaced or repaired based on inspection report as part of ESCR Project Area 1 contract.

2. I understand there's a valve that closes tide gates when the river is high but you can't keep them closed all the time (which is where sea level rise is leading us) - is this correct?

DEP Response: The tide gates within the tide gate chambers are designed to close only during high tide and storm surges. The tide gate will be held closed while the tide level in the river is higher than the water elevation within the tide gate chamber. During a storm, the Parallel Conveyance system (new sewer lines), part of the ESCR project, will convey the excess combined flow from the existing sewer system to the interceptor and then to the NYC DEP's Manhattan Pump Station, when the tide gates are closed. This will allow the existing system to function more efficiently.

NYC DEP takes climate change very seriously and are building towards climate resiliency, protecting our assets from climate change and sea level rise. Evaluating and investing in our sewer/drainage infrastructure, pumping stations and our Wastewater Resource Recovery Facilities (WRRF).

The impact of current and future coastal flooding on stormwater management is a neighborhood-scale issue. Engineered options, such as tide gates, can prevent backflows from surge events but they impede flow through the outfall and do not prevent overland inundation. More complex and expensive options that include extensive modifications of existing stormwater practices such as ponds and pumps will be considered together with a broader watershed-scale approach that aligns community growth and development with stormwater management goals. As coastal protection measures are implemented, the City will continue to develop integrated solutions to address these coastal impacts on stormwater infrastructure.

NYC DEP is applying the citywide Climate Resiliency Design Guidelines to our capital projects, which includes raising/floodproofing our WRRFs and pumping stations. Sea level rise is also included in our citywide Stormwater Flood Maps, so as the City seeks neighborhood-scale solutions for the flooded areas on these maps DEP will be considering sea level rise in addition to high intensity rain events.

3. Is it correct that elevating the outlets is part of the ESCR/ parallel conveyance work?

DEP Response: The work to reconstruct or rehabilitate the sewers and outfalls in East River Park falls under the Project Area 1 contract. This work does not include elevating the outlets, which is not possible while keeping them connected to the existing sewer network. Most of the City's sewer infrastructure is gravity-fed so if we elevated the outfalls, every part of the larger network would also need to be elevated.

4. Currently, rain that falls on the park flows both into the river and into catchment by the Delancey ramp and other spots along the park. In the future, in part due to the western slope down to the FDR, will this stormwater be shunted toward the neighborhood?

DEP Response: The majority of stormwater that falls within the project area is captured in the park. Any stormwater that flows onto the FDR from the park will be collected in catch basins and channeled into the sewer system.

5. Desiree showed an animation of the stormwater being piped west from the park into the pumping system along Ave D - what happens when it's beyond capacity, does the community flood (as it is shown in that animation's current conditions)? (I ask because I'm wondering if the way it's designed adds to the burden of the new parallel conveyance 1 inch of rain on one acre is 27,154 gallons of water weighing 113 tons. (Snow weighs 10%) 1 inch of rain on 45.6 acres is 1.2 million gallons weighing 5,153 tons. Hurricane Ida was 3.15 inches in an hour!)

DEP Response: The Parallel Conveyance system will add capacity to the sewer system, not increase the burden on it. The NYC DEP Manhattan Pump Station has a capacity of 400 million gallons per day (mgd). On an average dry weather day, the flow from the drainage protected area is about 40 mgd. In the event of a rainfall or snowmelt the combined sewers will generally convey up to twice the dry weather flow to the pumping station. If the combined flow exceeds the Manhattan Pump Station capacity, the flow in the collection system would start backing up and will cause sewer ups and ponding in the streets.

6. The Parallel Conveyance is designed to increase holding capacity but not to separate the current combined sanitary and stormwater system, is this correct?

DEP Response: That is correct. The purpose of the Parallel Conveyance system is not to separate the City's combined stormwater and sanitary sewer system. The Parallel Conveyance will support the existing sewer system by adding additional pipes underground to leverage the available capacity in the interceptor which leads to the Manhattan Pump Station while the outfalls are closed or limited due to high tide and storm surges.

7. Is there a complete Parallel Conveyance and sewer plan that CAG members can review, especially around the areas that flooded during Sandy but lack FEMA support? I assume NYC must have made one for bid package.

Revised DDC Response: The Parallel Conveyance package is out for bid. The design is in compliance with FEMA flood protection guidance. After the BID process, drawings can be requested from the Community Board or through the NYC FOIL process.

8. Idea L12, from the March 2018 Value Engineering Study, was to build a wall on the west side of the highway. In 2019, EIS details the floodwall of the west side of the park but not the west side of the highway. Do you know why that is?

DEP Response: This option was one of multiple alternatives that were conceived of during the Value Engineering exercise. While any project undergoing an environmental review could consider an unlimited number of alternatives, five were ultimately selected for analysis in the DEIS including the Preferred Alternative, the Flood Protection System with Raised Park Alternative.

9. Hoboken is separating their sewer and stormwater system. Why is NYC not doing that?

DEP Response: The NYC sewer system is old and extensive. It would be extremely difficult to separate due to the amount of underground utilities and limited space in existing streets.

10. What is the number of inches per hour that the parallel conveyance system will be able to handle?

DEP Response: DEP sewers in the area are designed to handle a rainfall intensity of 1.75 inches per hour. During a rain event, the regulator diverts sanitary flow and a small amount of storm flow to the interceptor. The excess combined flow is discharged through the outfall into open waters. If there's a storm event causing tide gate to close, the excess combined flow cannot be discharged through the outfall and will cause the sewer system to backup. The parallel conveyance sewers are designed to handle this flow and convey it to the interceptor to prevent flooding and sewer backups in the protected area. The Parallel Conveyance system includes small size pipes ranging from 24 to 48 inches in diameter. The hourly capacity is difficult to quantify because of the number of mechanisms to be factored into the equation but it's less than a rainfall intensity of 1.75 inches per hour.