

APPENDIX F: 8-STEP FLOODPLAIN REVIEW PROCESS

**FLOODPLAIN AND WETLANDS 8-STEP PROCESS IN ACCORDANCE WITH
EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT AND
EXECUTIVE ORDER 11990: WETLANDS**

New York Governor's Office of Storm Recovery
Village of Patchogue Out-of-District Sewer Extension
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Suffolk County (subrecipient), has applied to the FEMA HMGP for funding from the Initiative. The New York State Division of Homeland Security and Emergency Services is the recipient partner. The Village of Patchogue Out-of-District Sewer Extension Project (proposed action), located in Patchogue, Suffolk County, New York, is one project included in the Initiative, (Appendix A, Figure 1).

The proposed action consists of the construction of upgrades to the existing sewer collection system and the extension of sanitary sewer service to approximately 648 parcels outside the existing boundary of the Patchogue Sewer District. The proposed action includes three main components:

- 1) *Collection System Extension*: 19,225 linear feet of 2 to 4-inch-diameter, HDPE piping would be installed for the low-pressure sewer extension within existing paved public ROWs;
- 2) *Individual Sewer Connections*: approximately 648 individual on-site LPSGPS and new home service laterals ranging in length from 25 feet to 100 feet, totaling approximately 38,500 linear feet of 1 to 2-inch-diameter, HDPE piping would be installed to connect the unsewered parcels to the system; and
- 3) *Pump Station Upgrades*: the existing pumps at the West Avenue Pump Station would be replaced with pumps of greater flow capacity to accommodate the increased sanitary flows, and an emergency generator would be replaced in-kind.

Step ONE: Determine whether the action is located in a 100-year floodplain (or a 500-year floodplain for critical actions) or wetland.

The action is located in a 100-year floodplain, as indicated on FIRM panels 36103C0694H BS 36103C0907H, dated September 25, 2009. Approximately 108 acres (40 percent) of the project area is located within the 100-year floodplain, predominantly AE Zone (area of special flood hazard with water surface elevations determined) 5-6 feet base flood elevation (NAVD88) with a minimal area in the VE Zone 7 feet base flood elevation (NAVD88). Approximately 3 percent of the site is located in a 500-year floodplain, X shaded or 0.2-percent chance annual flood (Appendix A, Figures 7 and 8). The action is not located within a wetland.

This project is (a) new construction and (b) does not meet any of the exemptions in 44 CFR 9.5 or 24 CFR 55.12, therefore, EO 19988 applies. An evaluation of direct and indirect impacts associated with construction within a floodplain is required. This analysis considers the natural functions of floodplains as well as the impacts on flood levels, flood risk, and the flow of flood waters in the project area or to surrounding areas.

Step TWO: Notify the public for early review of the proposal and involve the affected and interested public in the decision-making process.

A public notice describing the project was published in the *Long Island Advance*, the local and regional paper, on June 4, 2015. The notice targeted citizens who may be affected by activities in floodplains and those who have an interest in the protection of the natural environment. As required by regulation, the notice also included the name, proposed location and description of the activity, total number of acres involved, and the HUD official or responsible entity contact for information as well as the location and hours of the office at which a full description of the proposed action could be viewed. A copy of the published notification is attached hereto. The required 15 calendar days were allowed for public comment. No comments were received during the 15 calendar days following publication. FEMA accepts this early notification as meeting the requirements of Step 2. FEMA also published a Cumulative Initial Public Notice in the New York Post 12/14/2012 for Sandy related funded projects.

Step THREE: Identify and evaluate practicable alternatives.

In addition to the proposed alternative described above, three alternative actions are considered in this 8-step process as follows: No Action, Alternative Technology (Vacuum Sewer Extension), and Locate the Project Outside of the Floodplain.

No-Action Alternative

Under the no-action alternative, no sewer connections would be constructed and on site systems would continue to operate as they do currently. Conditions of the environment would remain unchanged, and the area would remain subject to the existing potential for flood-related damage. The no-action alternative would promote the continued risk to human health and property from failures and backups during storm events and the continued weakening of flood mitigation benefits provided by tidal wetland systems in the Patchogue River and Great South Bay by allowing presently unsewered parcels to contribute nitrogen and pathogen contamination, resulting in the degradation of tidal wetlands and seagrass beds. The continued loss of tidal wetlands would increase the vulnerability of coastal communities along the south shore to impacts from storm surge and sea-level rise. This alternative does not satisfy the Purpose and Need of the proposed action.

Alternative Technology (Vacuum Sewer Extension)

This alternative would connect properties with a vacuum sewer system that collects sewage in receiving pits at each parcel that are then connected to a central vacuum pump station. The central vacuum pump station would be connected to the existing AWTF similar to the proposed action. This alternative would be able to serve fewer parcels; 388 as compared to 648 under the proposed action. It would meet the primary purpose of reducing human health and safety risks, but over a smaller area.

This alternative would meet the primary purpose of reducing human health and safety risks, but over a smaller area. This alternative would meet the secondary purpose of mitigating long-term, adverse impacts on surface waters and coastal wetlands, but to a lesser degree.

This alternative would enable existing populations to remain in the floodplain, resulting in sustained risk from flood hazards. However, this risk would be reduced by the potential flood mitigation benefits of the alternative and the fact that all newly constructed infrastructure would be underground. Utilizing alternative technology would provide sewer service to fewer parcels

than the proposed action due to a higher capital cost to construct the vacuum sewers. Therefore, it would result in less beneficial effects on surface water quality that would slow the deterioration of tidal wetlands, and less beneficial effects on potential tidal flood mitigation.

While this alternative would not require LPSGPS at each property or lateral connections to 388 properties, it would require the construction of the central vacuum station, which would result in a net increase in impervious surface area. However, this minimal area would not result in a measurable change in the potential flood risk from stormwater flooding.

Locate the Project Outside of the Floodplain

An alternative to locate the project outside of the floodplain was considered and rejected because it would not meet the project purpose of providing sewer service to frequently inundated parcels in low-lying areas that contribute to on-site sewer system failures and water quality impairment. Approximately 74 percent of Suffolk County residences are unsewered and the majority of these unsewered areas are located in densely developed waterfront communities, while an estimated 69 percent of the total nitrogen affecting ground and surface water supplies emanates from wastewater, specifically on-site sewage disposal systems (IBM 2014). The project seeks to provide sewer service to some of these waterfront communities which, due to the nature of the problem that the project aims to solve, are located within the floodplain. Locating the project outside of the floodplain would not meet the primary purpose of the project as the properties in the floodplain are most at risk of failure during floods and storm events leading to human health impacts. Locating the project outside of the floodplain would not provide sanitary sewer service to the communities that have the highest contribution to the problem of nitrogen and pathogen pollution resulting from failing on-site disposal systems.

Step FOUR: Identify Potential Direct and Indirect Impacts of Associated with Floodplain Development.

The proposed action would provide low-pressure sewer service to unsewered properties that are susceptible to both capacity and treatment or disposal failures of OSWS during flood events. It would mitigate short-term and repetitive, adverse impacts on human life and property associated with OSWS failures in the project area within the Patchogue River Watershed caused by natural hazards, as well as help mitigate long-term, adverse impacts associated with such failures on surface waters and coastal wetlands that reduce the ability of these waters and wetlands to provide natural protection against storm surge.

The proposed action would not result in significant adverse impacts on floodplains and seeks to provide flood mitigation benefits. The connection of approximately 648 parcels through out-of-district connections to the Patchogue Sewer District would result in the additional disposal of 300,000 GPD treated wastewater flows from the Patchogue AWTF into the Patchogue River. The proposed sewer infrastructure located within the floodplain would be located underground and would not be susceptible to damage from flooding and would not exacerbate flooding. The development footprint of the proposed action would not result in an increase in impervious cover because all structures would be located below ground except the West Avenue Pump Station upgrades, which would be located within the existing development footprint, but is not located within the floodplain.

Approximately 21,175 cubic yards of excavation would be required to construct the sewer main trenches and service laterals; however, suitable soils excavated during construction would be

placed back into utility trenches and compacted. Any excess material would be disposed of outside of floodplains and wetlands, resulting in no net increase of fill. All applicable permits would be obtained to comply with the CWA (Public Law 95-217) and SPDES.

The sewerage of presently unsewered parcels would enable existing populations to remain in the floodplain, resulting in sustained risk from flood hazards. However, this risk would be reduced by the potential flood mitigation benefits of the proposed action. The proposed action is not likely to result in significant induced growth; there are a total of 12 vacant parcels within the project area, of which only 10 are within the floodplain. Because of existing zoning regulations and the small number of vacant parcels within the project area, the proposed action should not result in increased development in the floodplain.

As discussed above, the project would allow for the decommissioning of approximately 648 on-site sanitary disposal systems, improving surface water quality in the Patchogue River and Great South Bay. Improved water quality would slow the deterioration of tidal wetlands, which can mitigate potential flooding impacts by attenuating wave action and reducing the effects of storm surge.

The potential direct or indirect impacts anticipated as a result of the project activities as described above would be offset by the increase in flood mitigation benefits anticipated from improved water quality, health of tidal wetlands, and coastal resiliency. Therefore, the proposed action would not result in a net increase of flood levels, flood risk, or the flow of flood waters on the project site or surrounding areas.

Step FIVE: Where practicable, design or modify the proposed action to minimize the potential adverse impacts on lives, property, and natural values within the floodplain and to restore, and preserve the values of the floodplain.

All sewer mains would be designed to be watertight and tested to make sure they are watertight before being put into service. The project would be designed to meet the Incorporated Village of Patchogue's Code for Sewage Disposal – Chapter 71 as well as the New York State *Recommended Standards for Wastewater Facilities* that require a 10-foot horizontal and 1.5-foot vertical separation between sewer and water infrastructure.

BMPs would be employed for soil erosion and sediment control, to be described in an SPDES General Permit for Stormwater Discharges from Construction Activity permit application, which would also include an Erosion and Sediment Control Plan and SWPPP.

The project is designed to preserve and restore floodplain functions by improving the health of nearby tidal marshes.

Step SIX: Re-evaluate the Proposed Action.

Although the proposed action is located in a floodplain, the project would be designed to minimize effects on floodplain values and would seek to provide coastal resiliency and flood mitigation benefits to the human community by reducing the potential for sewage treatment failures and backups during storm events and coastal resiliency and flood mitigation benefits to the surface waters and coastal wetlands by improving the health and associated wave attenuation functions of tidal wetland systems in the Patchogue River and Great South Bay.

FEMA has reevaluated the proposed action and determined that the proposed action is still practicable in light of its potential exposure to flood hazards in the floodplain. There is no

practicable alternative to the proposed action. This section may be modified following public comment on the EA and this eight-step evaluation if substantive comments are received regarding floodplain impacts.

The no-action alternative is not practicable because it would provide no additional flood mitigation or coastal resiliency benefits to meet the project purpose and need, while the area would remain subject to the existing potential for flood-related damage. While using alternative technology is a practicable alternative, it is not preferred because it would provide proportionally less beneficial effects on flood mitigation than the proposed action. Finally, an alternative to locate the project outside of the floodplain was considered and rejected because it would not remedy the problem of on-site sewer system failures that result from recurring flooding that leads to water quality impairment and deterioration of tidal wetlands.

Step SEVEN: Issue Findings and a Public Explanation.

Step 7 requires that the public be provided with an explanation of any final decisions that the proposed action in a floodplain is practicable, and about potential impacts of the proposed action on floodplains and associated mitigation measures. In accordance with 44 CFR 9.12, this notice is provided concurrent with the notice of availability of the EA for a 30-day period of public review and comment. Hard copies of the EA are available at the New York State Governor's Office of Storm Recovery, the Patchogue Village Hall, and the Patchogue Medford Library during the public review period. A "Notice for Final Public Review of a Proposed Activity in a 100-Year Floodplain" has been published in the *Long Island Advance* and was sent to the following agencies concurrent with the notice of this draft EA: FEMA – Region 2, EPA – Region 2, USFWS – Long Island Field Office, USACE NY District Office, HUD – Region 2, NYSDEC – Region 1, Division for Historic Preservation, New York State Parks, Recreation and Historic Preservation, New York State Department of State Division of Coastal Resources, Metropolitan Transportation Authority – LIRR, New York State Environmental Facilities Corporation, New York State Division of Homeland Security and Emergency Services, the State Office of Emergency Management, Suffolk County Department of Health Services, Suffolk County Department of Public Works, Suffolk County Council on Environmental Quality c/o Suffolk County Department of Economic Development and Planning, Suffolk County Department of Economic Development and Planning, Town of Brookhaven, and Village of Patchogue.

Step EIGHT: Implement the Proposed Action.

FEMA will ensure that this plan, as modified and described above, is executed and that necessary language is included in all agreements with participating parties. Further, FEMA will see that all mitigation measures described in Step 5 of this 8-step review and in the EA will be implemented. The proposed action will be conducted in accordance with applicable floodplain management requirements.