



WILDWOOD®

## MEMORANDUM

To: Economic Development Task Force Members

From: Ryan S. Thomas, City Administrator

Date: June 24, 2016

Re: Sewer Extension Planning for Historic Pond Area

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The extension of the MSD sanitary sewer system to the Historic Pond Area has been a past topic of discussion for the Economic Development Task Force, and has also been identified in the 2016 Master Plan Update.

Please be advised that the Department of Public Works introduced this topic at the June 7, 2016 Meeting of the Administration/Public Works Committee (see attached Memorandum), and recommended taking the first step of updating the 2003 Sewer Expansion Study to determine whether there is capacity to extend the system due to the current downstream improvements by MSD, and also taking into consideration the land use changes from the most recent Town Center Update.

The Administration/Public Works Committee supported moving forward with a Request for Qualifications for the necessary engineering services to update the study.

RST

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Department of Public Works

## MEMORANDUM

To: Administration/Public Works Committee Members

From: Rick C. Brown, Director of Public Works

Date: June 1, 2016

Re: Update to the Wildwood Town Center Sanitary Sewer Study

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### Background

In 2003, the City of Wildwood completed a study of sanitary sewer service within the Town Center area. This study ultimately led to the formation of Neighborhood Improvement District (NID), which resulted in the design and construction of improved and expanded sanitary sewers within the Town Center. A significant phase of the project was the expansion of MSD sewers to areas west of Route 109 along Manchester Road, including service to the St. Louis Community College and Old Pond School.

However, a recent proposal by Payne Family homes to construct single family homes on the Slavik property, located at 2431 Route 109, has led MSD to question the validity of the Town Center land use assumptions from the original 2003 study. For example, the 2003 study assumed the Slavik property would be developed for commercial purposes, whereby the sanitary sewer discharge would be lower than that of the single family homes proposed for the Slavik property. Thus, MSD is concerned that the proposed Slavik development project could jeopardize the ability to provide sanitary sewer service as promised to the remainder of the NID. To address this concern, MSD is recommending that the City update the 2003 study based on current Town Center land use.

It should be noted that an update to the 2003 study, would address two other items relating to sanitary sewer service in the Town Center area:

1. MSD is currently upgrading their Caulks Creek Sanitary Sewer trunk main, a project that will result in increased sanitary sewer capacity. By updating the 2003 study, we can evaluate the benefits of the expanded Caulks Creek Sewer project on Town Center sewer capacity.
2. The City would like to explore the extension of sanitary sewer service to the west, along Manchester Road, toward Wildwood Middle School. Such an extension could serve the existing businesses along Manchester Road, as well as Living Word Church, Wildwood Middle School, and the residential properties on Walnut and Maple Avenues.

MSD is requiring that the City of Wildwood take the lead in updating the 2003 Town Center Sanitary Sewer Study, and hire a consulting engineering firm to complete the work. Unfortunately, MSD is not willing to contribute toward the cost of the updated study. However, MSD will provide support to the City during the study process, and will review and approve the study.

### Recommendation

The Department is recommending that the City complete an update to the 2003 Town Center Sanitary Sewer Study, which will address the concerns stated above.

### Reasons for Recommendation

- An updated study will allow us to ensure that sanitary sewer service can be provided to those properties within the Town Center NID, as promised.
- An updated study will allow us to evaluate the feasibility of expanding sanitary sewer service to the west along Manchester Road toward Wildwood Middle School.

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- An updated study will quantify the impact of MSD's Caulks Creek Trunk Sewer project on sanitary sewer capacity in the Town Center.
- This action was identified as an Environmental Policy in the City's Master Plan (Policy #17).

For your reference, attached is the proposed Consultant Scope of Work as prepared by MSD.

Assuming a favorable recommendation by the Committee, the Department will initiate the process of soliciting potential engineering firms to complete the study. Once a recommended firm is identified, this matter will return to the Committee for further consideration.

I will be available for any questions or comments at the June 7, 2016 Administration/Public Works Committee Meeting.

RCB



## SCOPE OF SERVICE FOR WILDWOOD TOWN CENTER MODELING

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The following information is intended to be used to complete an update of the *Wildwood Town Center Sanitary Sewer Study – January 2003*. The City of Wildwood has completed construction of a portion of the area referred to as “Wildwood Town Center”. In May of 2016, the City of Wildwood contacted MSD in regards to updating their land use plan for the Town Center area and the possible affects this would have on the sanitary system. MSD recommended that the City of Wildwood hire a firm to update the existing model for the Caulks Creek watershed so a more complete analysis could be completed to reflect the land use changes. The following items, at a minimum, shall be completed to be able to review the demands of future development on the existing system.

1. Obtain a copy of the existing Caulks Creek Watershed Model from MSD.
2. Update the modeled collection system to the represent the existing sewers constructed in the Wildwood Area since the original model was developed. Use the *MSD Modeling Standards and Guidelines* as well as MSD’s *Data Analysis & Hydra Modeling Procedures* (This procedures manual can be obtained from MSD if the consultant does not already have a copy). If As-Built plans are not available, a survey of the structures may be necessary for top and flow line elevations of the features that were constructed after 2003.
3. Delineate and/or modify existing service areas for the new developments in the Wildwood area, following the parcel lines to generate the boundaries.
4. Population estimates, per capita rates, and diurnal patterns for will be required for residential developments. Commercial developments will require estimated daily flow volumes and diurnal patterns.
5. Using the meter data provided by MSD, verify the calibration for the sanitary flows to flow meter data to reflect dry-season conditions within +/- 10% for both the peak flow and total volume.

6. Submit the updated model to MSD for review and comment prior to proceeding to wet-weather analysis. MSD will provide review comments within 10 business days.
7. Using the meter and rainfall data provided by MSD, verify the wet weather calibration meets the wet-season criteria within +/- 20% for both the peak flow and total volume. If any adjustments are necessary, the patterns of the meter data must be calibrated to one storm event and be verified by at least two other storm events. Any calibration results should take into account the antecedent conditions for the area when reviewing the metered data and comparing it to the model.
8. Submit the wet-weather calibrated model to MSD for review and comment prior to proceeding to scenario generation. MSD will provide review comments within 10 business days.
9. Using the design storm provided by MSD, complete a model run and analyze the downstream portions of the model for surcharging conditions and capacity issues. This will be the baseline to determine what if any improvements are needed to convey flows for future developments in the Wildwood Town Center area.
10. Create additional SE layers, including estimates of population, per-capita rates, volumes, and diurnal patterns as necessary to estimate flows for future planned developments within the Wildwood Town Center area.
11. Run a design storm using the newly created layers that include the annexed area in conjunction with the 2030 Land Use Layer as provided by MSD. Compare the model results before and after the annexed area for deficiencies and produce a report discussing the differences. This report shall include alternatives for correcting the capacity issues as well as associated costs.
12. Any pump stations that could be impacted by the updated land use plan will need to be analyzed separate from the hydraulic model. A comparison of the design flow vs future flows will need to be completed in accordance with *Section 2 – Pump Station and Forcemain Design Criteria of the MSD Standard Pump Station Design and Construction Requirements dated July 2001*.