Minutes

Subject
Portsmouth & Chesapeake JLUS Stormwater Modeling Scenarios

Meeting date
6 Aug 2019

Attendees
See list at end of document

Location
Conference call as follow up from an earlier meeting at Portsmouth Redevelopment and Housing Authority, Portsmouth, VA

Prepared
13 Aug 2019

On August 6, 2019, the attendees spoke to confirm additional details on the tailwater (river levels) and rainfall scenarios that the AECOM team and Arcadis would use in running stormwater models to support the JLUS analysis. These scenarios are based on those discussed at the July 17, 2019 meeting, documented separately. This memo summarizes the key points about the discussion.

Suggested Modeling Scenarios

Based on the discussion, we have defined a common set of scenarios for consideration that will be presented to the Technical Committee for discussion. The AECOM team will prepare information to help convey the scenarios in an understandable way, including how they compare to the Norfolk/Virginia Beach JLUS scenarios.

Scenario Description*	**Tailwater Level** (feet NAVD88)	**24-Hour Rainfall** (inches)
1. Present-day 1-year return period (RP) river level, with no rainfall (i.e. "sunny day tidal flooding")	2.8	0.0
2. Present-day 1-year RP river level, with present-day 10-year RP, 24-hour Type II rainfall	2.8	6.2
3. Present-day 1-year RP river level + 1.5 feet of Sea Level Rise, with present-day 10-year RP, 24-hour Type II rainfall	4.3	6.2
4. Present-day 1-year RP river level + 3.0 feet of Sea Level Rise, with present-day 10-year RP, 24-hour Type II rainfall	5.8	6.2
5. Present-day 1-year RP river level + 1.5 feet of Sea Level Rise, with future (2050-2080) 10-year RP, 24-hour Type II rainfall	4.3	6.8
6. Present-day 1-year RP river level + 3.0 feet of Sea Level Rise, with future (2050-2080) 10-year RP, 24-hour Type II rainfall	5.8	6.8
*see bullets 1. and 2. below for additional detail		

1. River levels (tide and storm surge)

The 1-year RP frequency water level values around the project shorelines are to be established and will be confirmed by the Technical Committee. Elevations are likely to vary somewhat along the waterways and shorelines. Data sources include: NOAA tide gauges (limited to 2 or 3 points only), CARSWG (limited to DoD installations only), and USACE NACCS study data points (available all around the project shorelines). Technical Committee meeting materials can present the range for Committee discussion and agreement. The value in

the table above is the current 1-year return period value at the Sewells Point NOAA tide station, and it is similar to the minor tidal flooding level used in the Norfolk and Virginia Beach JLUS.

The rationale for using a defined frequency (based on annual probability, expressed as "return period") is that a primary benefit of the JLUS analysis will be to estimate the frequency – in a given year or some other defined period of time – when access to various facilities and corridors is likely to be blocked by flooding. Put another way, using input conditions for river level and rainfall that can be tied to a certain frequency of occurrence will allow the JLUS team to estimate how often the level of service of assets and roadways will be impaired by flooding, which will help to prioritize solutions.

2. Rainfall values

Present-day and future rainfalls will be those recommended in the May 2019 edition of the City of Virginia Beach, Dept. of Public Works, Draft Design Standards Manual, Section 8.3.2 (Table VIII-1). These values were developed by the City of Virginia Beach and their consultants, to reflect the fact that measured rainfall statistics show higher rainfall intensities than those published in NOAA Atlas 14 and to incorporate anticipated increased future rainfall intensities.

Note that both cities' scopes of work for stormwater modeling include more than one return period for rainfall events. Team should consider what additional rainfall amounts (higher or lower than the base 10-year frequency amount) would be good to include in the study.

Tim Hare suggested an idea of potentially using a range versus a specific number for future rainfall levels. The AECOM team would need to better understand how this could work and if the outputs would be compatible with the overall JLUS analysis and scope of work. Concerns exist about how range outputs would be used to do vulnerability analyses and other elements of the JLUS analysis.

Next Steps

Task	Lead	Status
AECOM and Moffatt and Nichol to coordinate with Arcadis to confirm various model logistics and assumptions about how to capture and document surface flooding, various hydraulic parameter assumptions, and how water level and surface flooding results will ultimately be delivered in a way that can be pulled into the JLUS's project's GIS layers for mapping and analysis	AECOM to set up coordinating call	Next call TBD
AECOM to hold call with Chesapeake to confirm model assumptions	AECOM to set up call	Tentatively 8/16/19
Develop summary PPT to describe recommended flood scenarios (for distribution before and discussion at next Technical Committee meeting)	AECOM Team	August

Attendees:

Ben McFarlane, HRPDC
Andrea Sweigart, AECOM
Seshadri Iyer, AECOM
Mike Sabon, AECOM
Brian Joyner, Moffat and Nichol

Tim Hare, Arcadis