Section 2: Hydrologic Analysis

# FHAD Report Section 2 Narrative

## Background and Basis for Hydrologic Analysis

1. Provide a vicinity map (District Boundary map with study watershed boundary shown and labeled).
2. Describe the purpose and scope for the current hydrologic evaluation and what parameters, data, or modeling methodologies have changed since the previous study.
3. Describe the overall hydrologic model and all calculations, references, and modeling used to develop hydrology.
   1. Describe the type of wave routing modeling used (i.e. dynamic wave, kinematic, etc) and why that choice was made.
   2. Explain key assumptions made for the model.
4. If using a previously approved hydrology, provide the date and reference to MHFD approved hydrology and skip the following sections.

## Watershed Overview Modeling Summary

### Stormwater Infrastructure and Major Hydraulic Features

1. Stormwater Detention
   1. Briefly describe modeled regional detention facilities and reference supplemental data spreadsheet.
   2. Describe modeling choices for representing storage and discharge.
2. Tran-Basin Flow (if any)
   1. Describe any tran-basin flows (flows leaving the study basin) and how those flows have been addressed in adjacent watershed studies and their associated models.
3. Major Split Flows/Diversions
   1. Describe any significant split flows or diversions within the basin explaining topographic features, infrastructure, or other parameters that affect the diversion.

### Reconciliation

1. Discuss hydrologic results including previous studies and regulatory models.
2. Describe the technique used to reconcile any deviations from regulatory flows to within 10% of the previous studies’ design flows.

### Results

1. Discuss hydrologic results of analysis performed under this scope of work. Include any additional explanations or narrative regarding modeling and analysis, limitations of findings, and future use of study results. Also include references to routing error, flooded notes, and results at regional storage facilities.
2. Provide a comparison of future and existing hydrology and state if a DFIRM (map update) is required.

### Hydrologic Problems (if scoped)

1. Provide a summary of hydrologic problems identified as part of the study related to significant increases in peak flows, base flows, or runoff volumes related to future development.

# FHAD Report Section 2 Technical Appendix

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| Appendix | Description |
| 1 | Section 2 Supplemental Spreadsheet |
| 2 | Land Uses with assigned impervious values. This should explain how various land use zones were translated to percent impervious for future conditions. |
| 3 | Soils Data. Provide table summarizing infiltration values used for each soil type based on hydrologic soil group. |
| 4 | Detention Rating Curve tables showing stage-storage-discharge relationships for all detention facilities. This is the raw summary data tables taken from as-built drawings or reports prior to entry into the hydrologic model. |
| 5 | Detention facility or infrastructure as-builts including any intergovernmental agreements or agreements with water storage/supply companies as appropriate. |
| 6 | CUHP Table and SWMM Result Table |
| 7 | Other items |