Section 3: Hydraulic Analysis

# FHAD Report Section 3 Narrative

## Hydraulic Model Development and Results

### Purpose and Conditions Modeled

1. Describes the purpose and scope for the current hydraulic evaluation and what parameters, data, or modeling methodologies have changed since the previous study. Reference hydrologic evaluation used as the basis for flow rates included in the hydraulic modeling, as well as any updates performed on the hydrology (if applicable). Provide a vicinity map (District Boundary map with study area) or reference the map from Section 2.

### Model Development

1. Discuss Development of Hydraulic Modeling and any important assumptions made. Specifically:
   1. Discuss development of HEC-RAS models used to delineate existing conditions floodplains.
   2. Any special hydraulic features such as split flows, diversions, or significant hydraulic infrastructure that directly affects flooding or flow characteristics.
   3. Discuss how Manning's n-values were determined; provide one of the following as support:
      1. A GIS point layer with representative photographs of the channel and estimated n-values;
      2. A table of n-values and cross section locations with descriptions (for enough cross sections to explain n-value development).
      3. A GIS polygon layer identifying n-values used within the hydraulic model.

### Model Results

1. Discuss results of hydraulic model with special attention to changes in hydraulic and flooding depths/extents over time, e.g., existing vs future conditions watershed conditions.
2. Explain difference from previous hydraulic analyses regarding existing facilities and floodplain delineation.

## Hydraulic Risk Assessment and Problem Identification

### Drainageway Crossings and Hydraulic Structures

1. Discuss existing drainage facilities, providing a brief description of physical condition and estimated capacity related to future hydrology discharges.
2. Describe procedures used to evaluate capacity of existing road crossings, channels, storm sewers and detention.

### Flood Damage Estimates

1. Discuss results of hydraulic model, including types and number of structures in the 100-yr floodplain.
2. Discuss number of structures in effective floodplain and how that differs from revised floodplain.
3. Summarize the damage estimates developed using the depth-damage analysis for the various flood events. (if scoped)

# FHAD Report Section 3 Technical Appendix

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| Appendix | Description |
| 1 | Section 3 Supplemental Spreadsheet |
| 3 | Flood Hazard Figure (pdf) |
| 4 | Flood Profiles (pdf) |
| 5 | Depth-damage analysis summary results (if scoped) |