**Subject: Update of NFIP-CDC Model**

Date: 19 July 2024

The NFIP-CDC Model was updated by CEWF-ECH in July 2024. The update consisted of modification of the geometry file (g11) in plan11 (p11) “CDC: 50% to 0.2% AEP, SPF [WF/CF]” for the Clear Fork reach only - no changes were made to the West Fork. The modification was necessary to restore the lower Clear Fork river alignment and reach lengths (from the West Fork/Clear Fork confluence to cross-section 13402) to match the previous published CDC Model (before RAMPP modeling). The Clear Fork river centerline and flow paths were modified from upstream of cross-section 13402 to the upstream end of the model to better represent the Clear Fork river alignment and overbank flow paths orientations which produced more accurate reach lengths.

Details of the work are as follows:

* All of the Clear Fork cross-sections were re-processed (RAS Mapper) and new river stationing and reach lengths computed
* The cross-sections geometries remained the same
* The cross-section stationing was rounded to whole numbers
* The bridges and inline structures were refined regarding stationing and upstream lengths
* The model was re-run and compared to the current NFIP-CDC Model results. Results show no or very little changes due to the updates. The table below show the model differences for the 1% AEP and SPF events at selected points along the Clear Fork.
* A full comparison of both models shows differences between the two models that are greater than those shown in the table below occur and are attributable to the revised river channel and overbank flow paths and resulting reach lengths. The change in total reach lengths are as follows: LOB -1.90%, CH -0.16% ROB -14.35%

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| **Table. Comparison of Current NFIP-CDC Model to Modified NFIP-CDC Model**  **Clear Fork (plan11)** | | | | | | | | | |
| **Location\*** | **NFIP-CDC Model** | | |  | **Modified NFIP-CDC Model** | | |  | ***Change*** |
| **Stationing** | **Flood Event** | **WSE** |  | **Stationing** | **Flood Event** | **WSE** |  |
| Ped. bridge | 473.31 | 1% AEP | 541.14 |  | 473 | 1% AEP | 541.14 |  | *0.00* |
| 473.31 | SPF | 553.24 |  | 473 | SPF | 553.24 |  | *0.00* |
|  | | | | | | | | | |
| 7th Street | 4346.114 | 1% AEP | 543.70 |  | 4346 | 1% AEP | 543.69 |  | *-0.01* |
| 4346.114 | SPF | 555.33 |  | 4346 | SPF | 555.33 |  | *0.00* |
|  | | | | | | | | | |
| Lancaster Ave. | 6085.75 | 1% AEP | 545.40 |  | 6086 | 1% AEP | 545.40 |  | *0.00* |
| 6085.75 | SPF | 556.55 |  | 6086 | SPF | 556.54 |  | *-0.01* |
|  | | | | | | | | | |
| IH-30 | 12010.59 | 1% AEP | 550.59 |  | 12011 | 1% AEP | 550.59 |  | *0.00* |
| 12010.59 | SPF | 560.11 |  | 12011 | SPF | 560.11 |  | *0.00* |
|  |  |  |  |  |  |  |  |  |  |
| Miniature RR | 13364.58 | 1% AEP | 555.17 |  | 13365 | 1% AEP | 555.16 |  | *-0.01* |
| 13364.58 | SPF | 564.2 |  | 13365 | SPF | 564.19 |  | *-0.01* |
|  | | | | | | | | | |
| University Dr. | 16054 | 1% AEP | 560.08 |  | 16052 | 1% AEP | 559.94 |  | *-0.14* |
| 16054 | SPF | 566.18 |  | 16052 | SPF | 565.99 |  | *-0.19* |
|  | | | | | | | | | |
| Hulen Street | 24191 | 1% AEP | 569.72 |  | 24183 | 1% AEP | 569.7 |  | *-0.02* |
| 24191 | SPF | 577.01 |  | 24183 | SPF | 576.98 |  | *-0.03* |
|  | | | | | | | | | |
| Bryant-Irvin Rd. | 34814 | 1% AEP | 588.42 |  | 34793 | 1% AEP | 588.42 |  | *0.00* |
| 34814 | SPF | 596.48 |  | 34793 | SPF | 596.49 |  | *0.01* |
|  | | | | | | | | | |
| SH 183 | 39977 | 1% AEP | 602.36 |  | 39929 | 1% AEP | 602.37 |  | *0.01* |
| 39977 | SPF | 607.89 |  | 39929 | SPF | 607.9 |  | *0.01* |
| *\** Cross-sections are located downstream of each bridge | | | | | | | | | |