Test HSP2 Model Summary

05/25/2023

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The models compared in this document are:

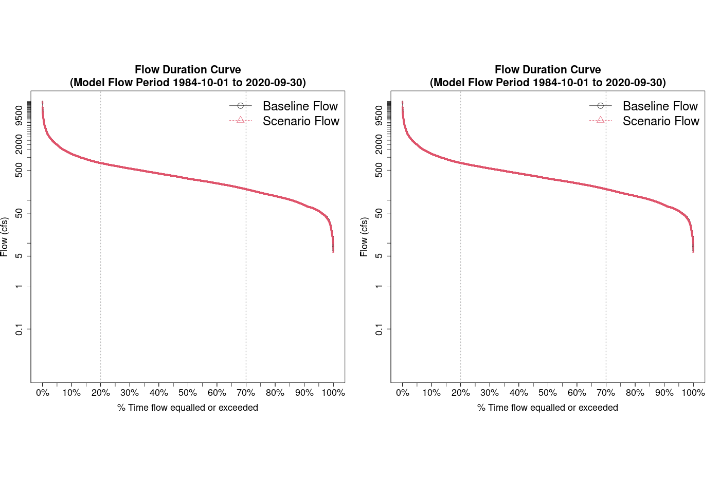
## Warning: `add\_rownames()` was deprecated in dplyr 1.0.0.  
## i Please use `tibble::rownames\_to\_column()` instead.  
## This warning is displayed once every 8 hours.  
## Call `lifecycle::last\_lifecycle\_warnings()` to see where this warning was generated.

**Table** **:** Properties of each model compared in this document.

| **Properties** | **Model 1** | **Model 2** |
| --- | --- | --- |
| Model | Appomatox River cbp-6.0 | Appomatox River cbp-6.1 |
| Hydrocode | JA4\_7280\_7340 | vahydrosw\_wshed\_JA4\_7280\_7340 |
| Ftype | cbp60 | vahydro |
| Model Version | cbp-6.0 | cbp-6.1 |
| Run ID | hsp2\_2022 | subsheds |

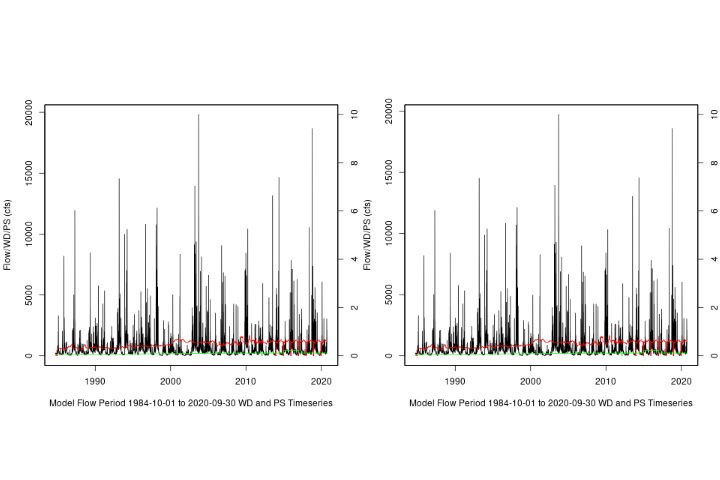
# Flow Modeling

## Flow Duration Curve



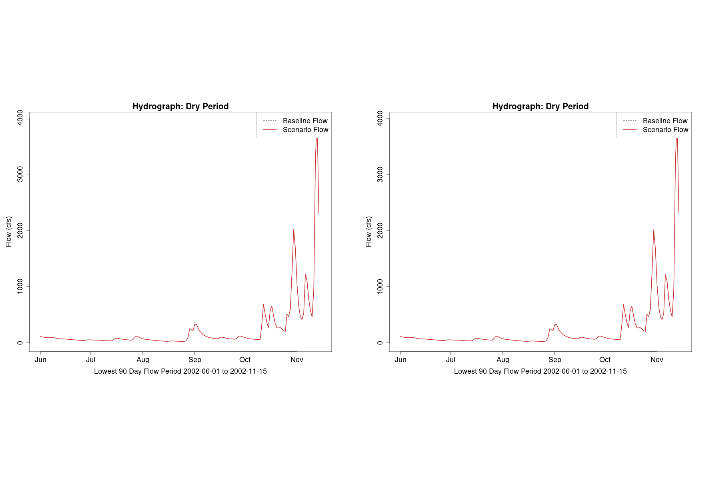
**Figure** **:** Flow duration curves from VAHydro: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## Mean Flow, Withdrawals and Point Sources



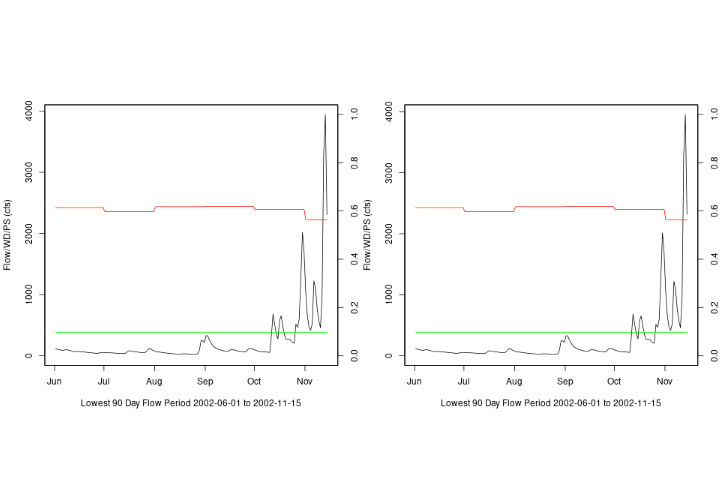
**Figure** **:** Discharge, point sources, and withdrawals from VAHydro: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## Dry Period Hydrograph



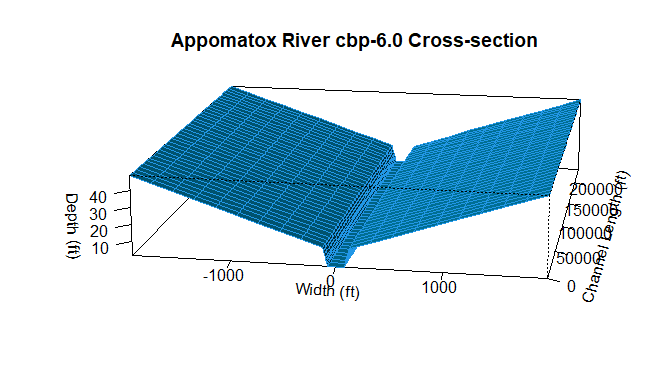
**Figure** **:** The dry periods from VAHydro: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

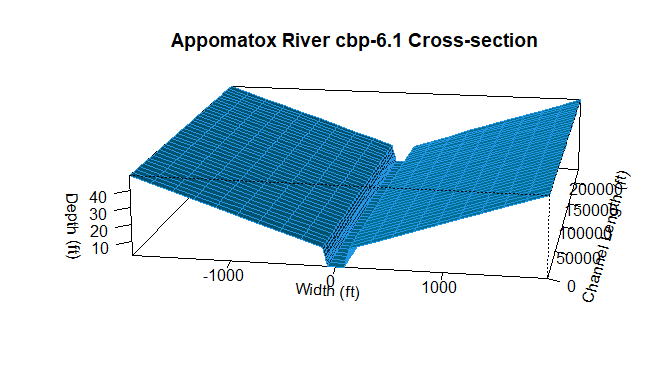
## 90-day Low Flows over a 2 year Period



**Figure** **:** The 2 year, 90-day low flows from VAHydro: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

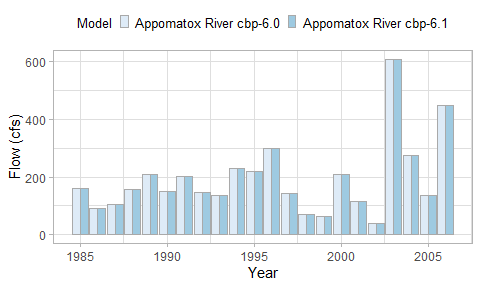
## FTABLE Visual





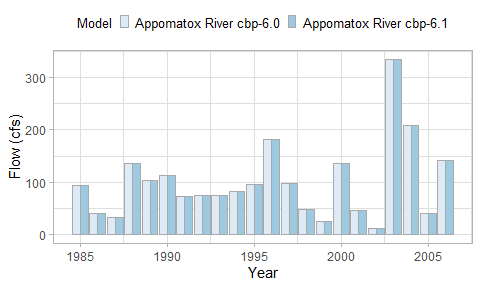
# Time Series Analysis

## 90-Day Low Flow Comparison



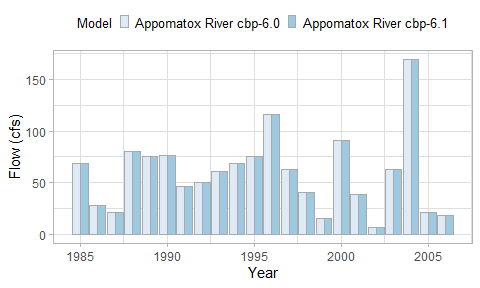
**Figure** **:** The 90-day low flows: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## 30-Day Low Flow Comparison



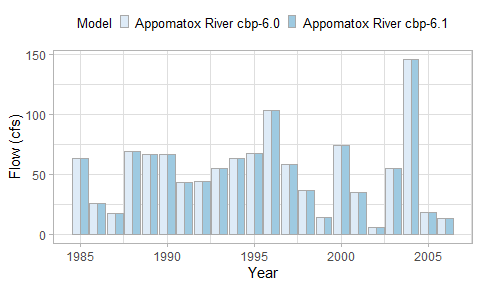
**Figure** **:** The 30-day low flows: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## 7-Day Low Flow Comparison



**Figure** **:** The 7-day low flows: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## 1-Day Low Flow Comparison



**Figure** **:** The 1-day low flows: Appomatox River cbp-6.0 vs Appomatox River cbp-6.1

## Model Performance Scatterplots

## Model %-Difference

# Metrics Summary

| **Description** | **hsp2\_2022** | **subsheds** |
| --- | --- | --- |
| River Segment Model Statistics: | Appomatox River cbp-6.0 | Appomatox River cbp-6.1 |
| Mean Flow Out (cfs) | 585.64 | 585.72 |
| 90 Day Low Flow (cfs) | 39.84 | 39.85 |
| 30 Day Low Flow (cfs) | 11.62 | 11.62 |
| 7 Day Low Flow (cfs) | 7.01 | 7.01 |
| 1 Day Low Flow (cfs) | 6.21 | 6.21 |
| Consumptive Use Fraction (1.0-Qout/Qbaseline) | 0 | 0 |
| Cumulative Withdrawal Flow Out (mgd) | 0.31 | 0.31 |
| Cumulative Point Source Flow In (mgd) | 0.06 | 0.06 |
| Withdrawal Flow Out (mgd) | 0.31 | 0.31 |
| Point Source Flow In (mgd) | 0.06 | 0.06 |