**Masoud (UofM):**

• List of gauges for your current model setup:

Streamflow at stations with IDs: 050C012, 5092000, 5082500, 5051500. These are all along the main stream. The firs one is the most downstream in Canada (Ste Agathe) and the others are upstream of that in US.

• Gauges you are willing to contributed to Nelson-MiP calibration and validation

              The aforementioned gages

• Time periods of interest (calibration vs validation)

              Currently, we are simulating from 1980 to 2012.

• Meteorological forcing data suggestion

              We are open to use data suggested by MiP

• Name (s) and contact of alternate(s) for those you have not yet specify someone

              N/A

**Ameer (WSA):**

**• List of gauges for your current model setup**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.No | Station ID | Station name | Drainage area (Km2) | Remarks |
| 1 | 05MC003 | Lilian River near Lady lake | 229 | Seasonal |
| 2 | 05MC001 | Assiniboine River at Sturgis | 1930 | Seasonal |
| 3 | 05MB003 | Whitesand Rivr near Canora | 8740 | Seasonal |
| 4 | 05MD004 | Assiniboine River at Kamsack | 11662 | Continous |
| 5 | 05MB001 | Yorkton creek near Ebenezer | 2320 | Seasonal |

**• Gauges you are willing to contributed to Nelson-MiP calibration and validation**

05MC001 (un regulated- data available from march to October every year)

05MD004 (regulated)

**• Time periods of interest (calibration vs validation)**

Calibration 1995-2004; validation 2005 -2014. This would cover both dry and wet periods and would be consistent with Manitoba models calibration/validation period

**• Meteorological forcing data suggestion**

For SWAT, it would be easy to use NCEP-CFRS re-analysis (https://globalweather.tamu.edu/) product. This is a dedicated SWAT global data portal where forcing climate data comes in SWAT format including an auto-generated weather generator. If not then WFDEI-GEM-CaPA.

**Ajay (UofC):**

**Pouya (U Alberta):**

Regarding the list of gauges, we are still in the process of collecting data and have not completed that part yet. However, based on our objectives in our study, we have collected both water quality and quantity data from a variety of sources based on the type of data and the location. For instance, the Hydrometric data are from the National Water Data Archive: HYDAT.

About calibration and validation years, we are not in that stage yet; however, most of the data that we have collected and worked on are from the year 2000 to 2018. Therefore, most probably the calibration and validation years would be during that period of time.

**Scott (Strategic Consulting):**

The hydrometric gauges we will definitely be looking at are summarized below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | ID | Lat | Lon | Drainage Area |
| ROCK LAKE NEAR GLENORA | 05OB027 | 49.21 | -99.13 | 3630 |
| ROSEISLE CREEK NEAR ROSEISLE | 05OF009 | 49.50 | -98.33 | 223 |
| BOYNE RIVER NEAR TREHERNE | 05OF010 | 49.67 | -98.64 | 270 |
| PEMBINA RIVER ABOVE LORNE LAKE | 05OA010 | 49.26 | -99.46 | 573 |
| BOYNE RIVER NEAR ROSEISLE | 05OF011 | 49.55 | -98.41 | 589 |
| BOYNE RIVER NEAR STEPHENFIELD | 05OF006 | 49.51 | -98.25 | 987 |
| BOYNE RIVER NEAR CARMAN | 05OF003 | 49.52 | -97.94 | 1130 |
| PEMBINA RIVER BELOW CRYSTAL CREEK | 05OB023 | 49.22 | -99.03 | 4480 |
| PEMBINA RIVER NEAR OUTLET OF SWAN LAKE | 05OB019 | 49.36 | -98.84 | 4990 |
| PEMBINA RIVER NEAR LA RIVIERE | 05OB001 | 49.23 | -98.68 | 5330 |
| PEMBINA RIVER NEAR WINDYGATES | 05OB007 | 49.03 | -98.27 | 7500 |
| RED RIVER AT EMERSON | 05OC001 | 49.00 | -97.22 | 102000 |

Our model is not developed yet and we have not settled on our modeling methodology just yet either, so we will likely expand on this list greatly, but we will never be removing any of these stations. As a note, the power point had us doing the LNRB; this is not correct. We will be focusing on the Red River Basin. The LNRB HEC model that Trish is thinking about belongs to MB Hydro so we cannot use it. Our time period of interest is 1981-current for all gauges.

I have also attached the filled out spreadsheet for our model setup plan. Again, we have not built our model yet, but we plan to use the standard MIP data sources as of now.

**Wouter (SUMMA):**

Regarding your other questions:

- Gauges in current setup: none, because we're still setting up.

- Gauges to contribute: once done we'll be able to contribute simulations for the Nelson and its sub-basins. We're aiming to avoid calibration

- Time periods: based on ERA5 data, we're looking to simulate from 1979 to current

- Met data: ERA5

Yassin (MESH)

I used 37 streamflow gauging stations in MESH Saskatchewan River Basin model, please see the list in the attached word file. If anyone is interested in including smaller watersheds, the list can be expanded to 54 streamflow stations, see the second text file. However, for Nelson-MiP calibration and validation, I will contribute calibration-validation performance on the 37 streamflow stations.

Currently, the simulation period is 2002-2011. 2002 used for warm-up, 2003-2008 for calibration, and 2009-2011 for validation. I’m using CaPA precipitation, and the data is available from 2002 onwards. So, it is possible to extend the simulation or validation period for Nelson MiP up to 2017.

Regarding forcing data, MESH uses sub-daily data, and  we use precipitation from CaPA and the remaining data from GEM. Among available sub-daily precipitation data, CaPA seems better product , see Wong et al., (2017). However, for daily data, I guess ANUSPLINE data could be a better choice.  Another long-term sub-daily forcing which you are maybe aware of is WFDEI-GEM-CaPA (<https://www.earth-syst-sci-data-discuss.net/essd-2019-103/>).

Wong JS, Razavi S, Bonsal BR, Wheater HS, Asong ZE. 2017. Inter-comparison of daily precipitation products for large-scale hydro-climatic applications over Canada. *Hydrology and Earth System Sciences* **21** (4): 2163–2185 DOI: 10.5194/hess-21-2163-2017