CALIFORNIA DEPARTMENT OF WATER RESOURCES

DSM2 Quick Start: Input System

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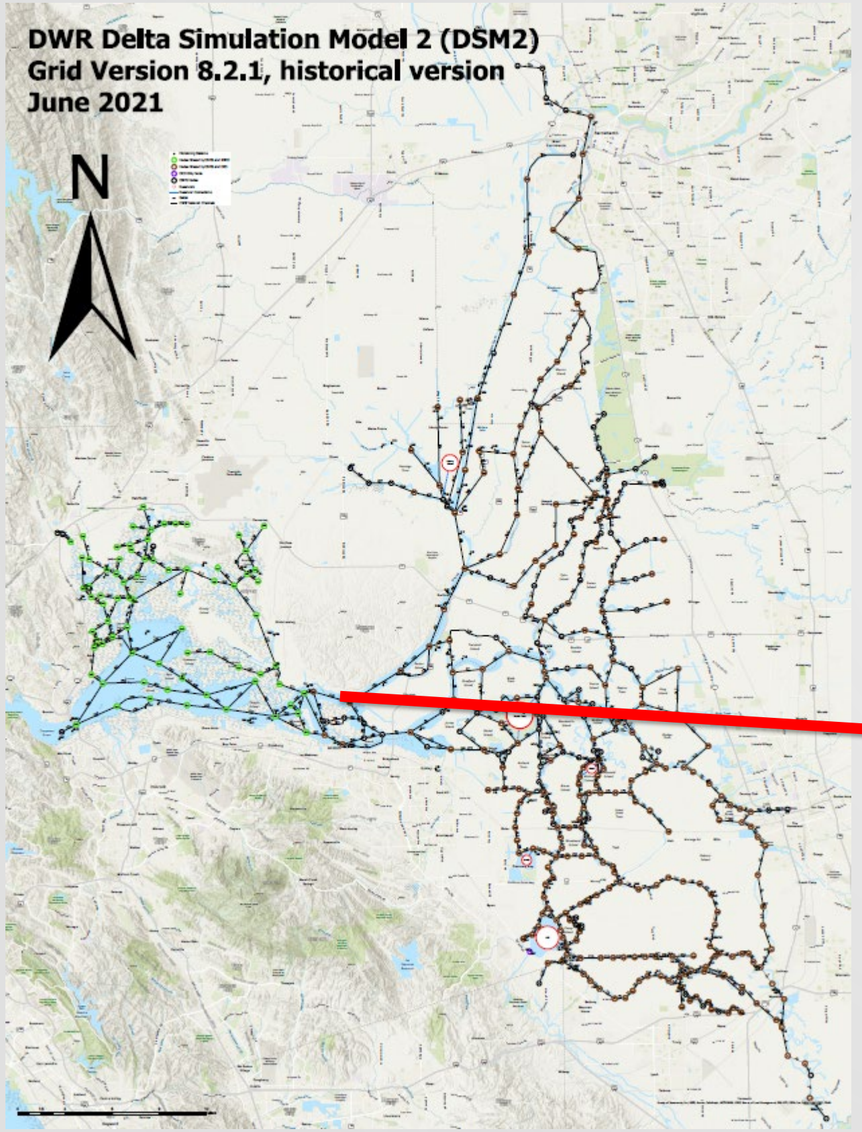
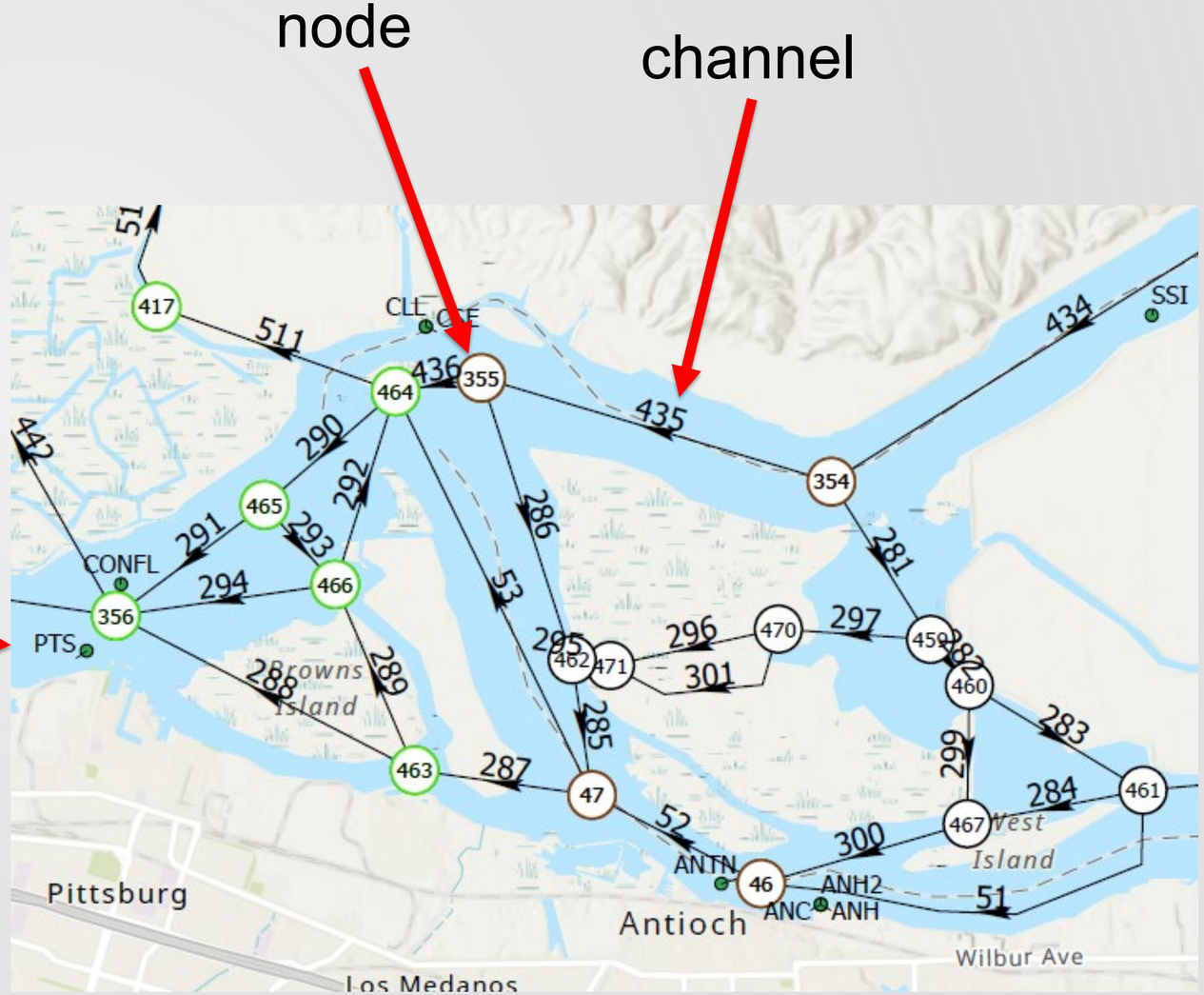
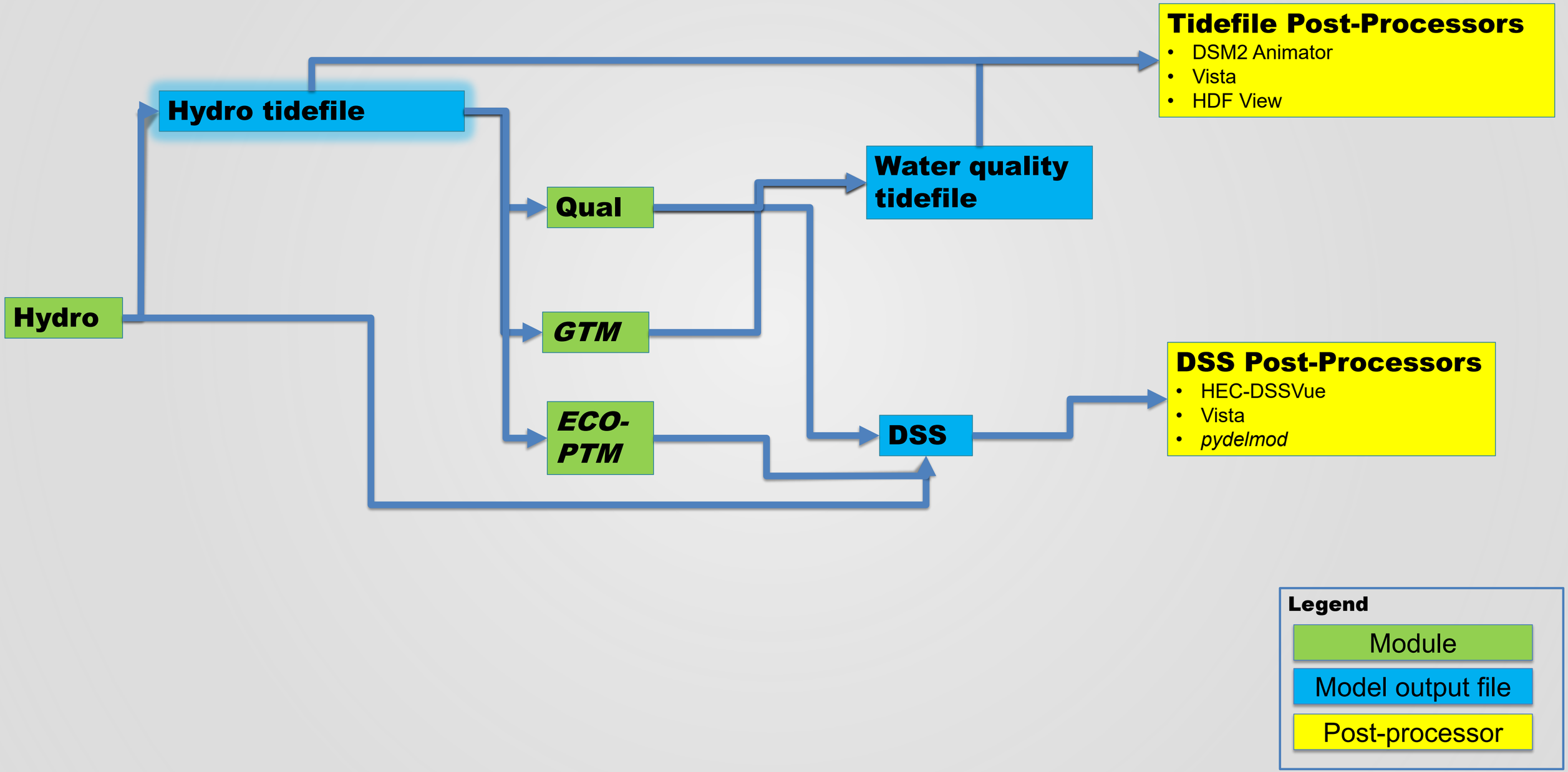
1. DSM2 grid map

https://data.cnra.ca.gov/dataset/dsm2-georeferenced-model-grid/





2. DSM2 Modules and Post-Processors



3. Folders in the DSM2 installation

Folders in dsm2\ folder

• bin\:	dsm2 executables
• common_input\:	shared dsm2 input files
• documentation\:	dsm2 documentation
• extras\:	software you may find useful
• license\:	DSM2 copyright and license
• scripts\:	vscript scripts for input/output processing
• studies\:	create your studies here
• study_templates\:	Copy these folders to create new studies
• timeseries\:	shared dss timeseries input data
• tutorials\:	dsm2 tutorials
• vista\:	the DSM2 Vista application

4. Input file general guidelines

- Input system is very flexible
- Use best practices
- If you don’t, you can simplify your setup later

5. Fixed vs time-varying input

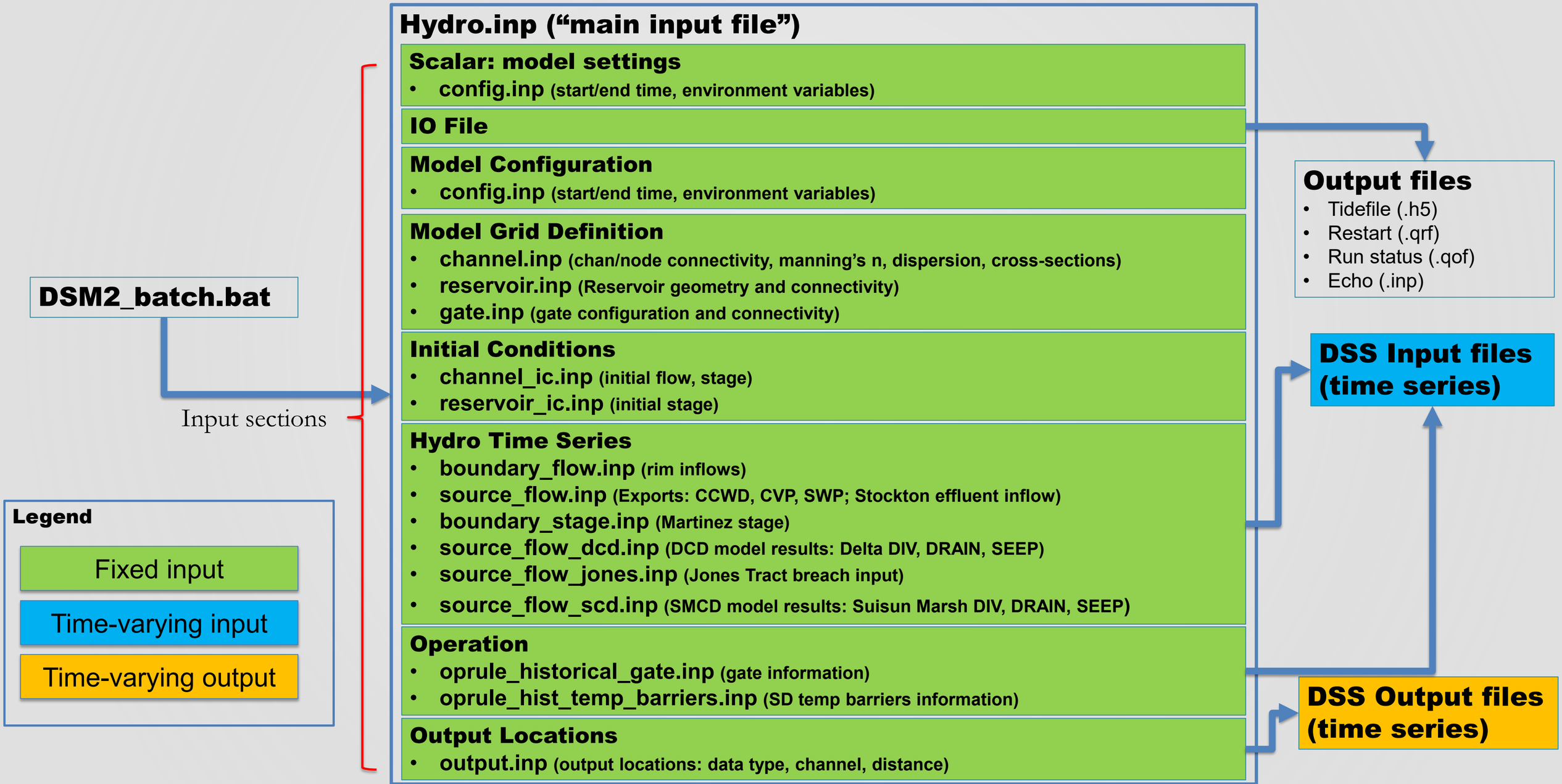
- **Fixed** input: text files

```
BOUNDARY_FLOW
NAME       NODE  SIGN  FILLIN  FILE           PATH
calaveras    21     1  last    ${BNDRYINPUT}  /FILL+CHAN/RCAL009/FLOW//1DAY/${HISTFLOWVERSION}/
cosumnes    446     1  last    ${BNDRYINPUT}  /FILL+CHAN/RCSM075/FLOW//1DAY/${HISTFLOWVERSION}/
moke        447     1  last    ${BNDRYINPUT}  /FILL+CHAN/RMKL070/FLOW//1DAY/${HISTFLOWVERSION}/
north_bay   273    -1  last    ${BNDRYINPUT}  /FILL+CHAN/SLBAR002/FLOW-EXPORT//1DAY/${HISTFLOWVERSION}/
sac         330     1  last    ${BNDRYINPUT}  /FILL+CHAN/RSAC155/FLOW//1DAY/${HISTFLOWVERSION}/
vernalis     17     1  last    ${BNDRYINPUT}  /FILL+CHAN/RSAN112/FLOW//1DAY/${HISTFLOWVERSION}/
yolo        316     1  last    ${BNDRYINPUT}  /FILL+CHAN/BYOLO040/FLOW//1DAY/${HISTFLOWVERSION}/
END
```

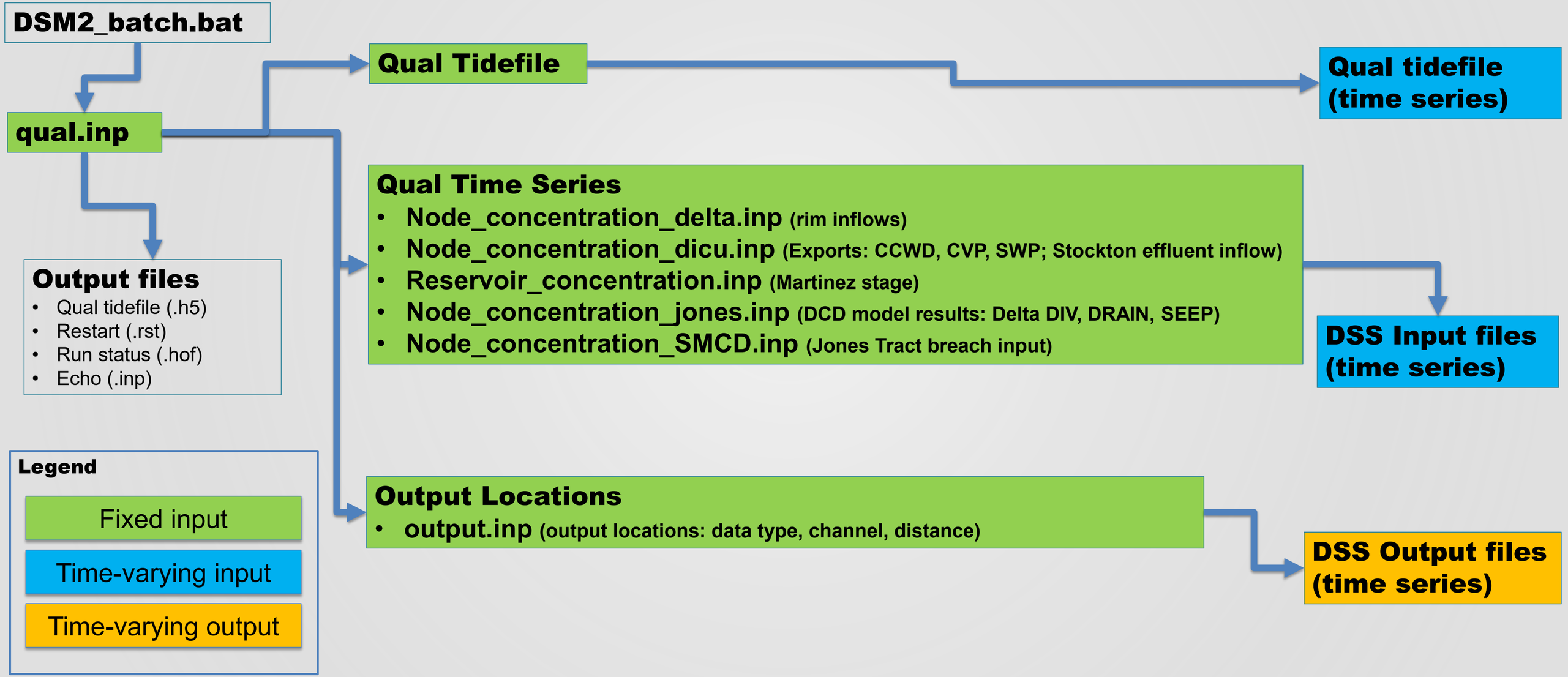
- **Time-varying** input: DSS files (inflows, stage, exports, gate positions, etc.)

Date / Time	RCAL009 FLOW DWR-DMS...
	cfs
	INST-VAL
01 Oct 89, 24:00	138.0
02 Oct 89, 24:00	133.0
03 Oct 89, 24:00	119.0
04 Oct 89, 24:00	118.0
05 Oct 89, 24:00	134.0
06 Oct 89, 24:00	145.0
07 Oct 89, 24:00	164.0
08 Oct 89, 24:00	148.0

6. Layering in DSM2 Hydro Input Setup

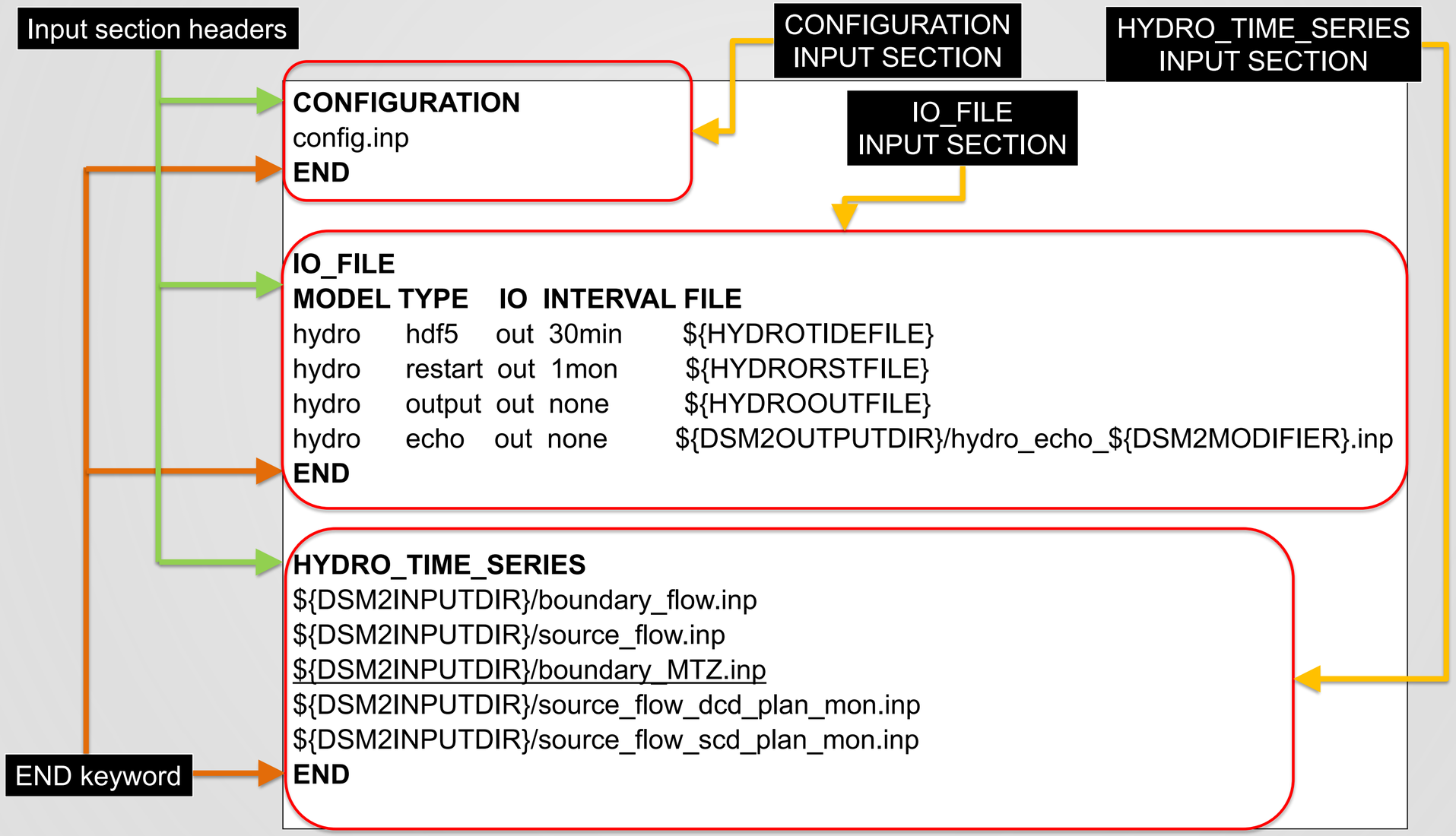


6. Layering in DSM2 Qual Input Setup



7. Input sections

main input file hydro.inp



8. Environment variables in DSM2 input

config.inp file

Defines environment variables, which are used to configure a DSM2 simulation

Defining the environment variable DSM2MODIFIER

```
ENVVAR
NAME                VALUE
DSM2MODIFIER        historical        # Study name used for DSM2 output
START_DATE          01Jan1990
END_DATE            31Dec2019
DSM2INPUTDIR         ../../common_input
END
```

Using the environment variable DSM2INPUTDIR

```
HYDRO_TIME_SERIES
${DSM2INPUTDIR}/boundary_flow.inp
END
```

To get the value of an environment variable, use a dollar sign and curly braces.

Example: "${DSM2INPUTDIR}/boundary_flow.inp"

Becomes "historical/boundary_flow.inp"

9. Using Layering to specify time-varying input

Martinez stage input specification: layering with environment variables

"Main Input File" for Hydro: hydro.inp

```
HYDRO_TIME_SERIES
${DSM2INPUTDIR}/boundary_flow.inp
${DSM2INPUTDIR}/source_flow.inp
${DSM2INPUTDIR}/boundary_MTZ.inp
${DSM2INPUTDIR}/source_flow_dcd_plan_mon.inp
${DSM2INPUTDIR}/source_flow_scd_plan_mon.inp
END
```

boundary_MTZ.inp

```
# Description:
# Historical stage at Martinez78
BOUNDARY_STAGE
NAME    NODE    FILLIN   FILE                PATH
mtz     361     linear   ${BNDRYINPUT}       /FILL+CHAN/RSAC054/STAGE//15MIN/${HISTSTAGEVERSION}_NAVD/
END
```

config.inp

```
ENVVAR
NAME                    VALUE
DSM2INPUTDIR            ../../common_input
VERSIONDATE             201712
HISTFLOWVERSION         DWR-DMS-${VERSIONDATE}
HISTSTAGEVERSION        ${HISTFLOWVERSION}
TSINPUTDIR              ../../timeseries
BNDRYINPUT              ${TSINPUTDIR}/hist201712.dss
END
```

Questions?

Please enter questions into the chat

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