




UFINCH: An Application for Simulating and Adjusting UnFlows In Networks of CHannels Described by the NHDPlus Geospatial Framework Using Continuous Daily Flow Data at USGS Streamgages

**Supported by NAWQA IWS
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Main Interface

USGS NAWQA IWS
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UFINCH: Unit Flows In Networks of CHannels

Version 0.2

Hydrologic Region

01 New England

02 Mid-Atlantic

03N South Atlantic North

03S South Atlantic South

Selected Hydrologic Subregion

Unspecified

Display Map of Hydrologic Regions in Contiguous US

Flowline Shapefile Name

Unspecified

Streamgage Shapefile Name

Unspecified

Open Flowline Shapefile

Display Flowlines

Open Streamgage Shapefile

Display Streamgages

Specify Water Year

yyyy

Active Layer

Flowlines

Streamgages

Flowline Attributes

ComID

Not selected

Latitude

Not selected

Longitude

Not selected

Flowline Name

Not selected

Streamgage Attributes

Number

Not selected

Name

Not selected

Period of Record

First

yyyy-mm

Last

yyyy-mm

Latitude

Not selected

Longitude

Not selected

Index

Number

DArea (sq.mi)

Not selected

ComID

Not selected

Select Streamgage as Network Base

Select Base Streamgage

Unspecified

Number of Flowlines in Gage Network

Flowlines

Retrieve Flow Data Inventory and Daily Flows

Read 15-min Flows

Filename of Flow Data

Unspecified

Time Span of Flow Data at Streamgage

Start

Year-Mo-Day Hr:Mn

End

Year-Mo-Day Hr:Mn

Time Intervals

Compute Travel Times in Streamgage Network

Proportionately Adjust Mean Velocities and Travel Times

Adjust Slider to Change Proportion [0.2 - 5.0]

[Slider]

Select Proportion

1

Compute Travel Times

Travel Time Statistics		
	Minimum	Maximum
15-Min	0	0
Days	0	0

Compute Unit Flows in Streamgage Network

Start: Year-Mo-Day Hr:Mn

Year | Mo | Da | Hr | Mn

End: Year-Mo-Day Hr:Mn

Year | Mo | Da | Hr | Mn

Comp. Intervals

Simulate Unit Flows at All Flowlines

Save All Unit Flows as MLBinary

Select Target Streamgage

Gage Number

Number

0

Base and Target Gages

Assess Fit and Adjust Flow

Unit to Daily Values for All ComIDs

Aggregate

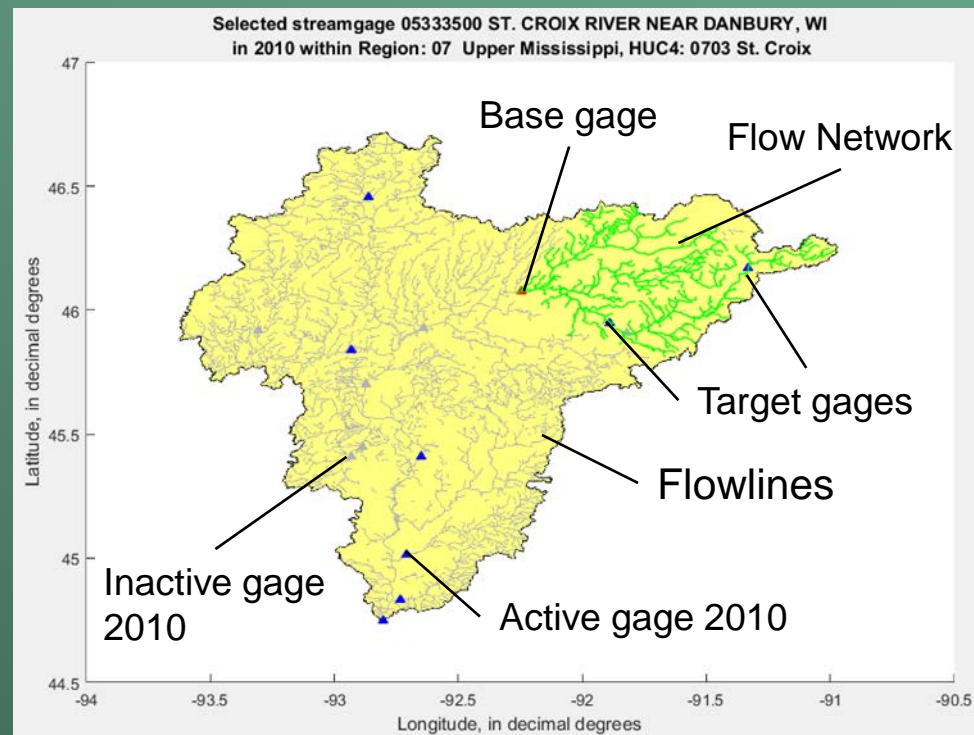
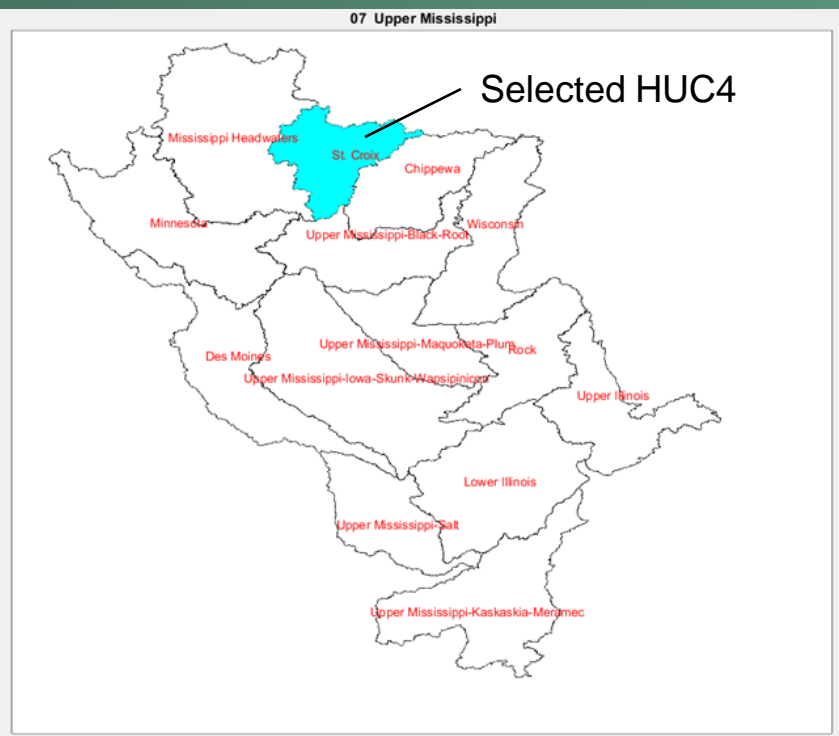
Save

List Equations to Console

Generate Equations

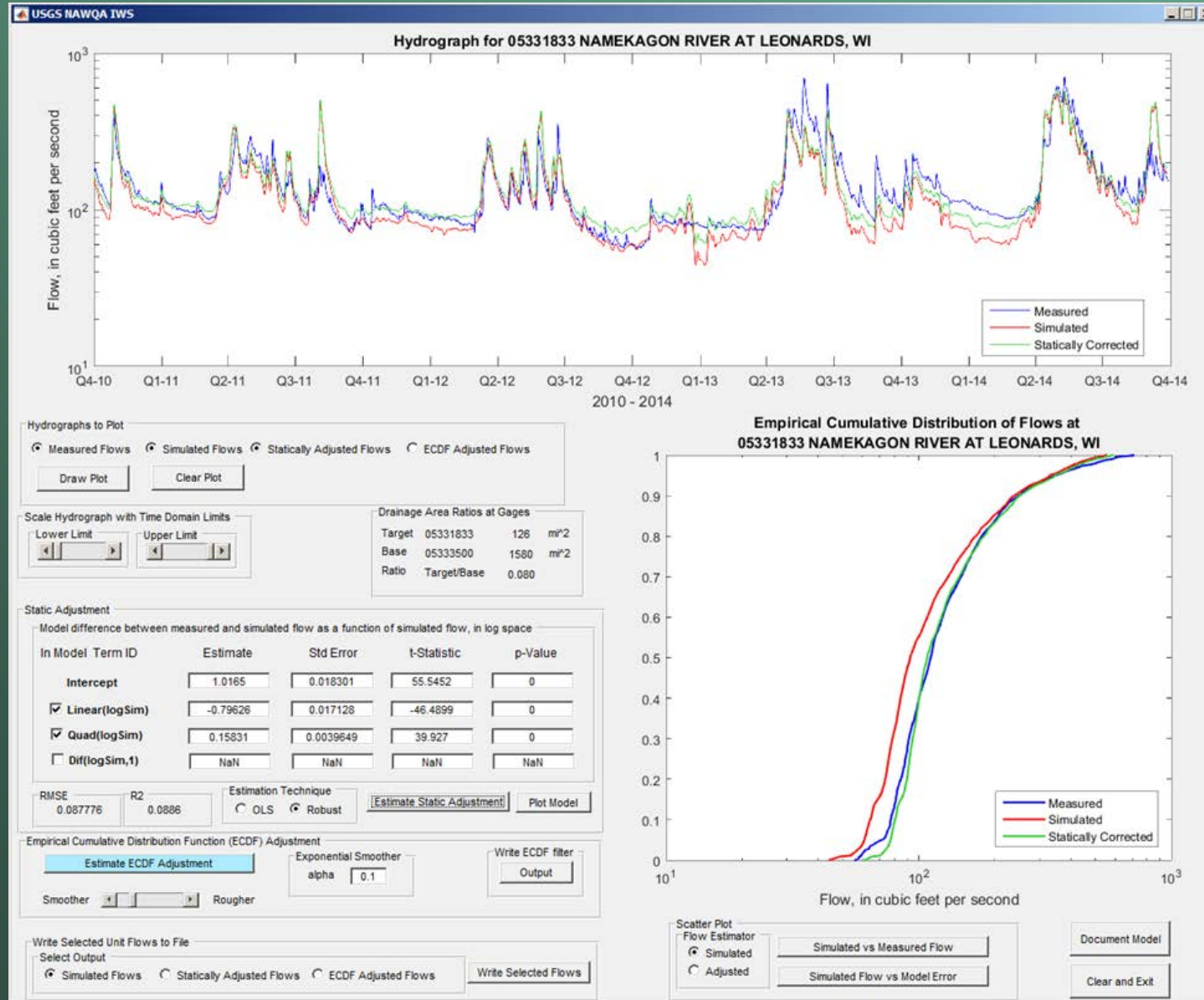
Exit

Selecting HUC4, Flowlines, Streamgages, and Active Network



Select named 4-digit HUC

Compare and Adjust Flows at Target 2



Summary of UFINCH

- Highly automated environment for simulating unit flows
 - Retrieves base and target daily flows from inventory info
 - Interpolates to 15-min daily flows
 - Identifies flow network upstream from base gage
 - Computes travel time on the basis of NHDPlus info
 - Compares simulated with measured flows
 - Provides mechanisms to adjust simulated flows
- Potential for quality assuring streamflow data and extending streamflow records at a target gage