



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

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Main Interface

USGS NAWQA IWS
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USGS
science for a changing world

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

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

Open Flowline Shapefile

Display Flowlines

Flowline Shapefile Name

Unspecified

Compute Travel Times in Streamgage Network

Proportionately Adjust Mean Velocities and Travel Times

Adjust Slider to Change Proportion [0.2 - 5.0] Select Proportion

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Compute Travel Times

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

Open Streamgage Shapefile

Display Streamgages

Streamgage Shapefile Name

Unspecified

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

Select Target Streamgage

Gage Number: Number: 0

Assess Fit and Adjust Flow

Unit to Daily Values for All ComIDs

Aggregate Save

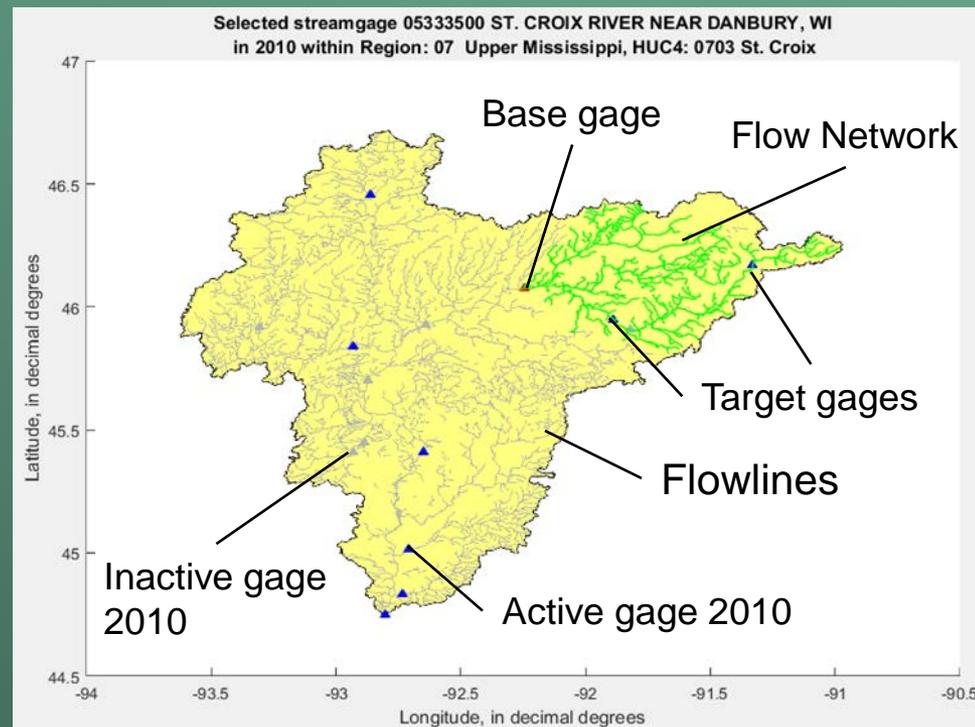
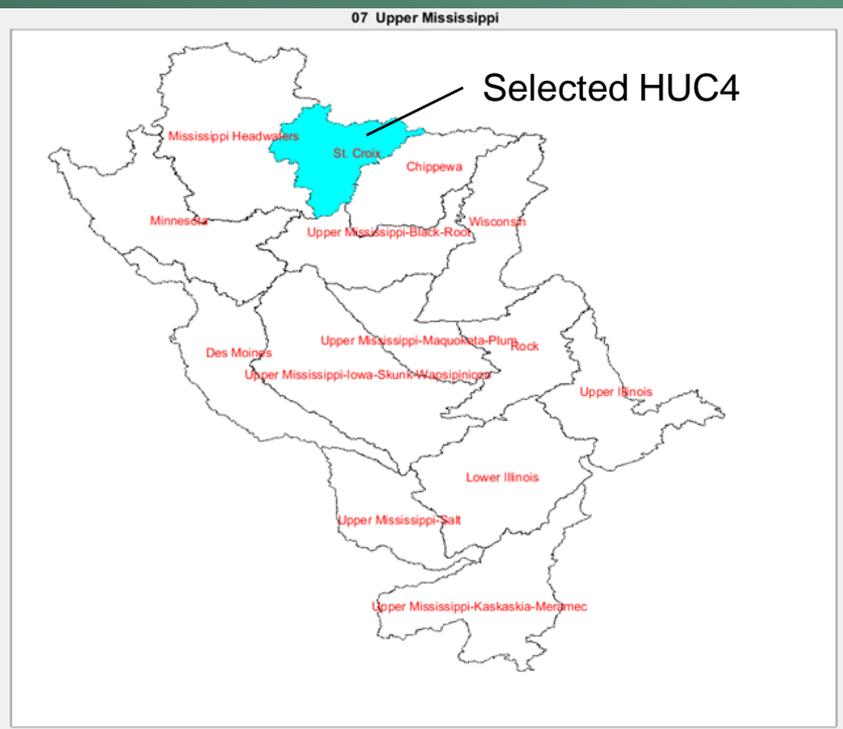
Base and Target Gages

Assess Fit and Adjust Flow

List Equations to Console

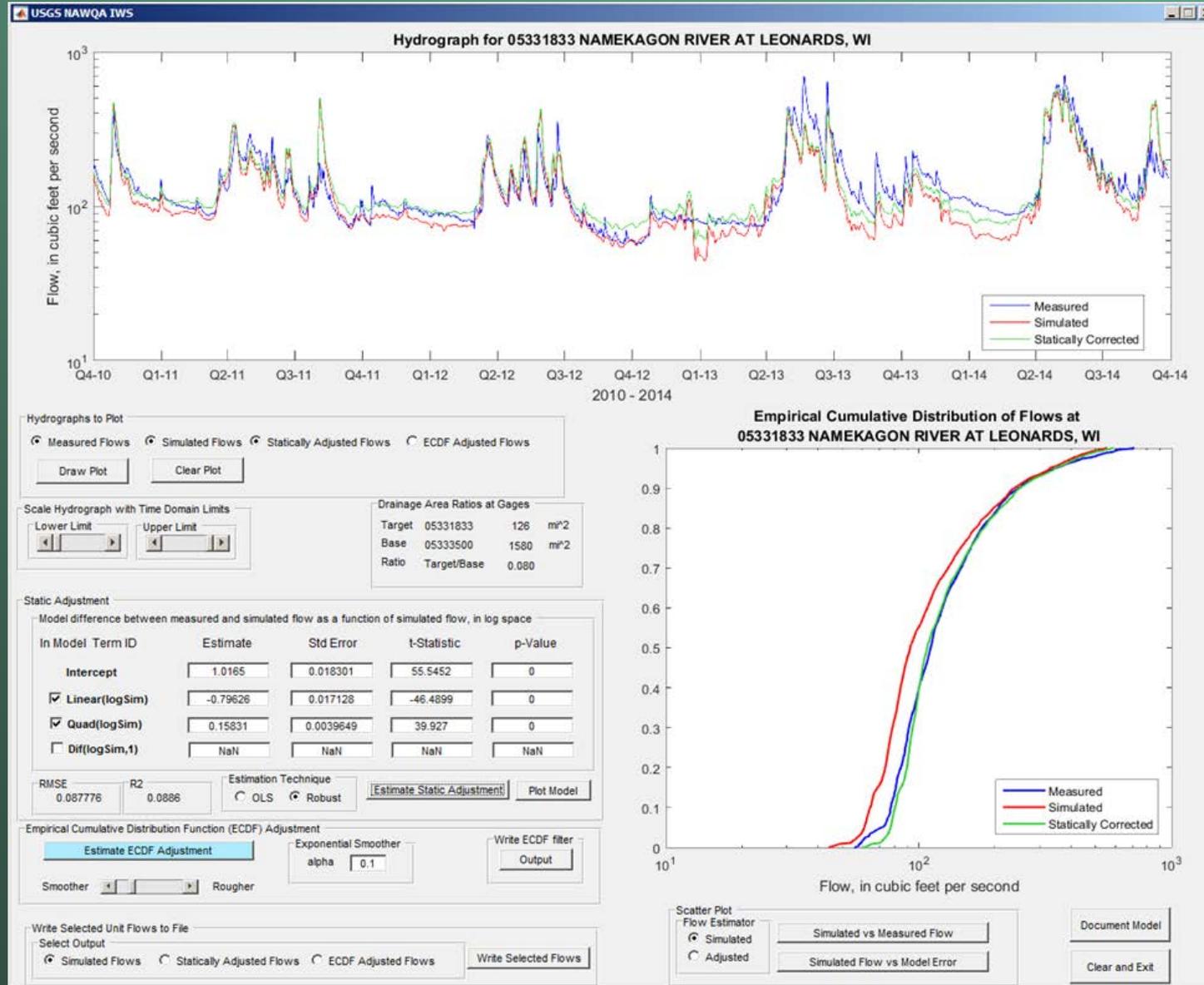
Generate Equations Exit

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