DWQ Intermittent and Perennial Streams and Origins Mapping

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Intermittent and Perennial Streams and Origins Mapping

- DWQ, DOT, and NCSU (early 2004) funded the Intermittent and Perennial Streams and Origins Project

- Center for Geographical Information and Analysis (CGIA) Streambed Mapping - of Senate Bill 1152 passed in late 2004.

- Project Coordination
  - CGIA –Primary Stream Layer
  - DWQ - Provide additional data to manage regulatory needs

Intermittent and Perennial Streams and Origins Mapping

- DWQ Stream Mapping Requirements

**Headwater streams
  Stream Origins
  Flow Duration
  Existence (or not)

- DWQ 401 program, DOT, DENR Divisions, developers and planners

Stream Origin and Flow Duration can be Integrated into CGIA Stream Map

Intermittent and Perennial Streams and Origins Mapping

Methodology

- Field Component

  Locate and GPS stream origins (DWQ Stream Identification 2005)

- GIS/Modeling Component

  Lidar >>> DEM

  best method -ANUDEM

  best resolution –tie 1.52m (5ft) and 3.05m (10ft)

- Build model based on field data and geospatial data

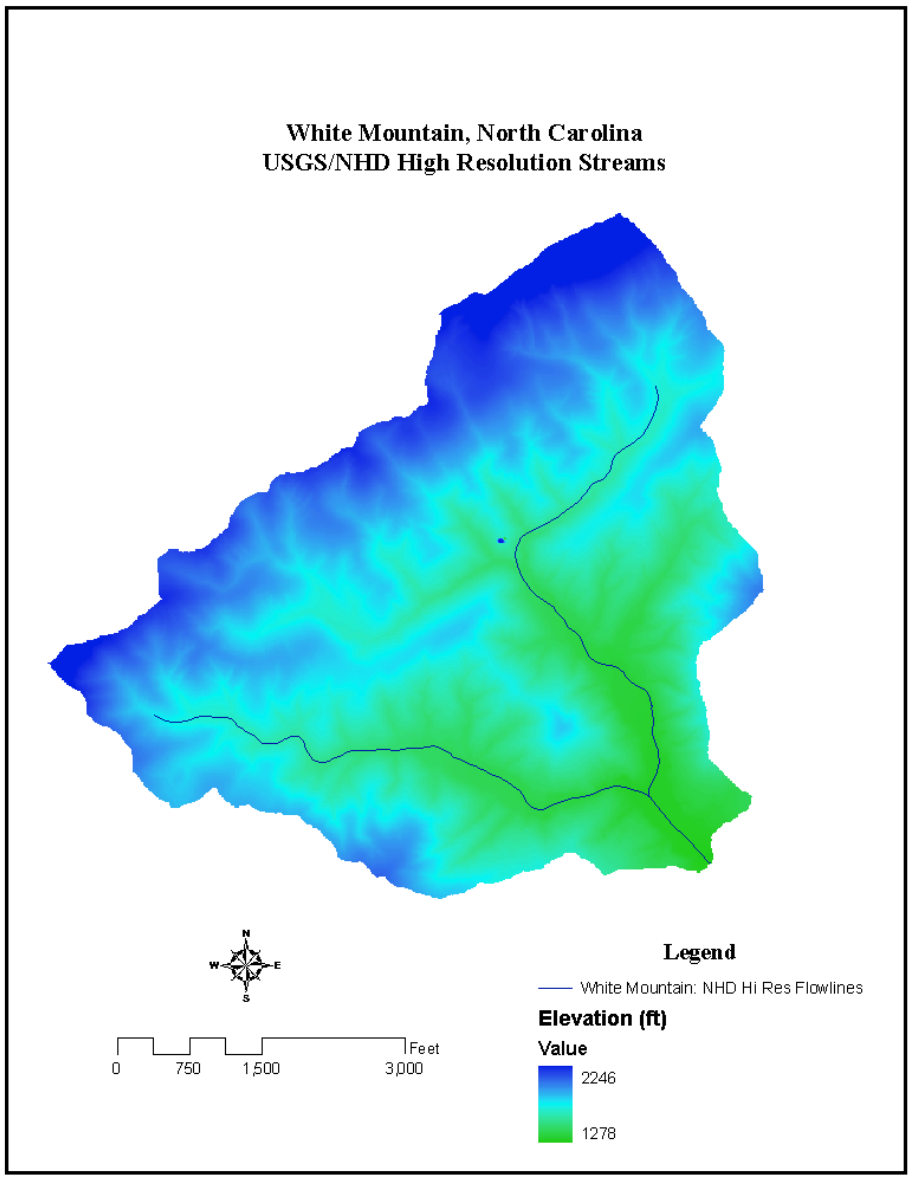
  Determine characteristics that contribute to origin locations e.g., slope curvature, local gradient, contributing watershed area, soils…

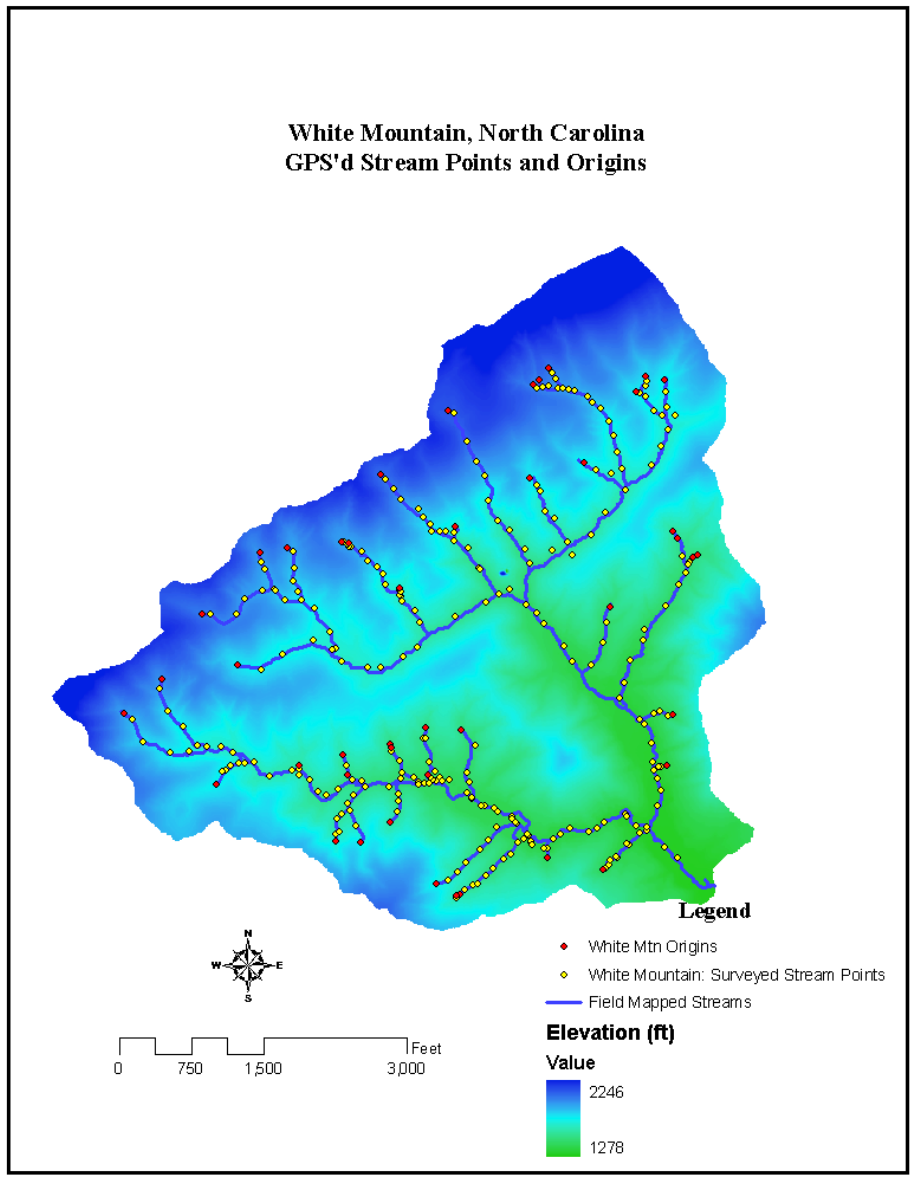
- Model Application

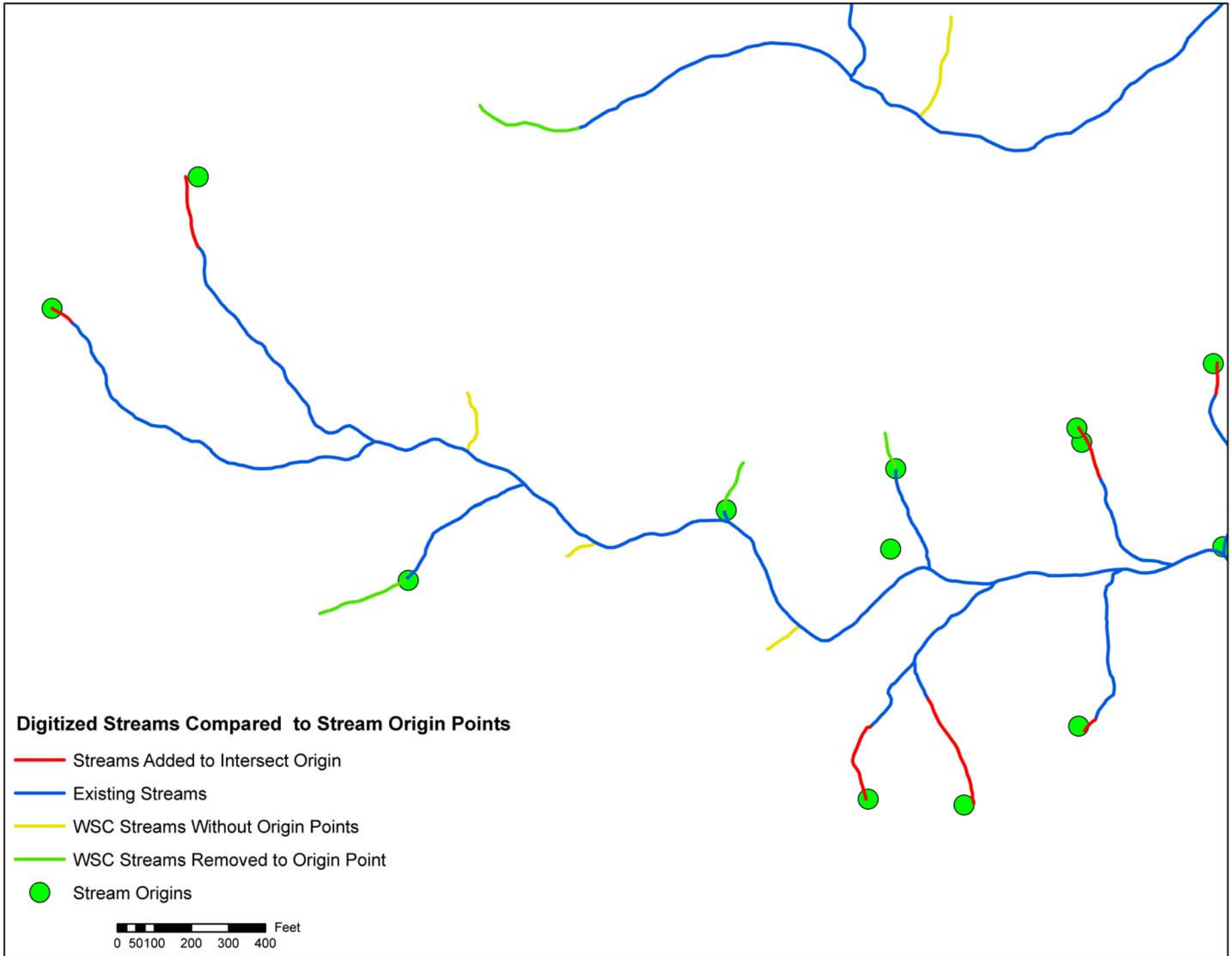
  Predict remaining origins in the state

- Validate model predictions

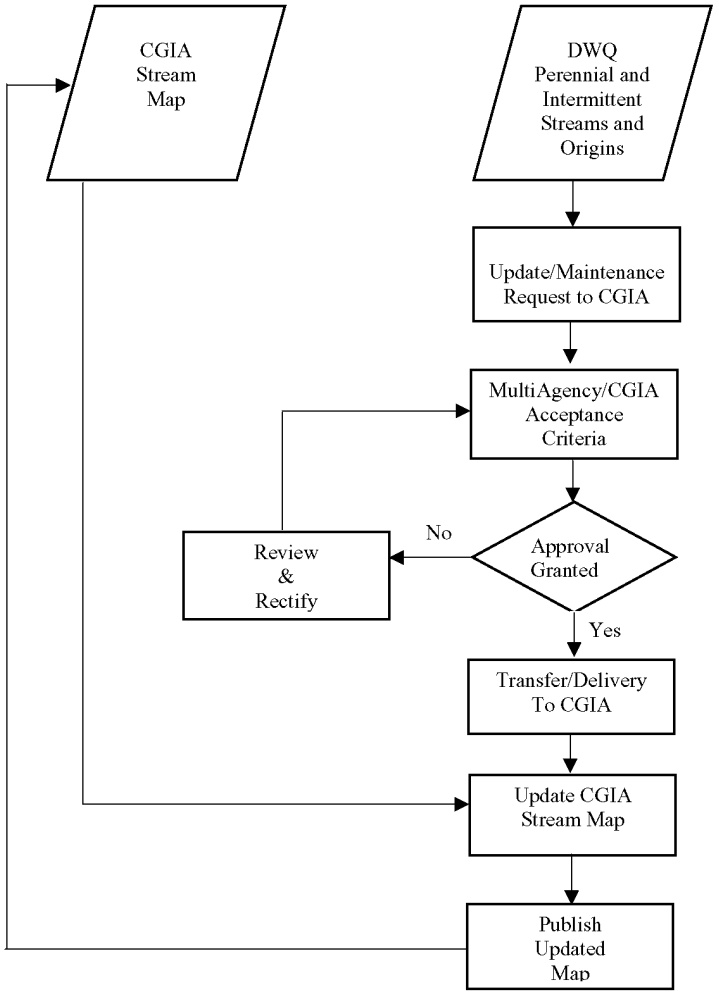
Comparison Between USGS Streams and Field Mapped Streams






Digitized Streams Compared to Stream Origin Points
Streams Added to Intersect Origin
Existing Streams
WSC Streams Without Origin Points
WSC Streams Removed to Origin Point
Stream Origins
Feet
0 50100 200 300 400

Basic Components of Process Steps for IP Streams and Origins Maintenance to CGIA Stream Map



Conceptual Model for Business Process in CGIA Data Maintenance Plan

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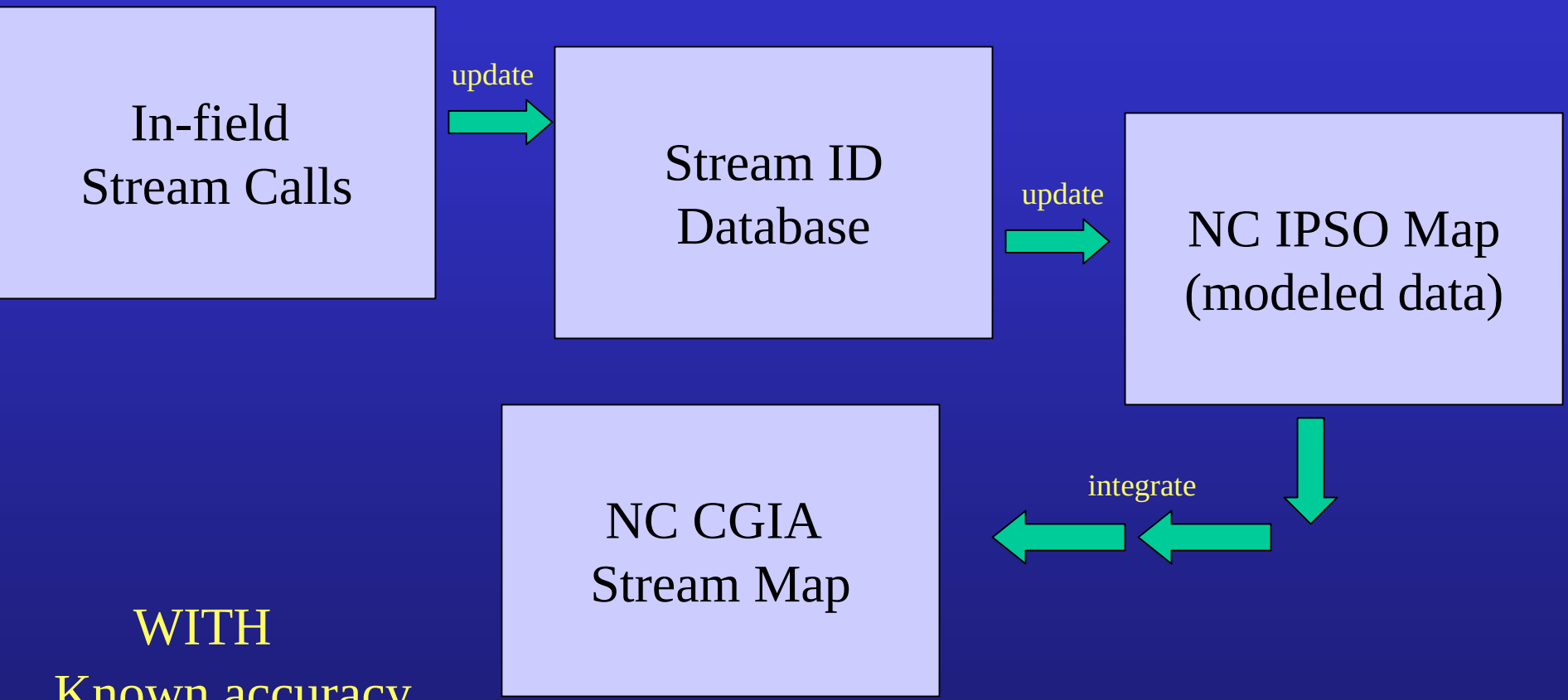
In a few years, we will have…..



WITH

Known accuracy

Digitally accessible

Regular updates

Intermittent and Perennial Streams and Origins Mapping

Benefits

- Save time, money and resources for DENR staff (DWQ, EEP, DLR, DWR, WRC and DCM) Delegated Counties, other public agencies

- Better oversight and management of stream and buffer impacts and mitigation

- Accurate stream representation will become even more important with resolution of Rapanos and Carabell U.S. Supreme Court cases