DWQ Intermittent and Perennial Streams and Origins Mapping

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In cooperation with
NC State University
NC Department of Transportation
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
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- 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
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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
Conceptual Model for Business Process in CGIA Data Maintenance Plan
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In a few years, we will have.....

In-field Stream Calls

Stream ID Database

NC IPSO Map (modeled data)

NC CGIA Stream Map

WITH
Known accuracy
Digitally accessible
Regular updates
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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