Working Group for Building Footprints

NCGICC

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PURPOSE

The business plan will:

- Outline **WHY** this initiative should be undertaken by detailing the value to the stakeholders involved

- Determine **HOW** to update and maintain this framework dataset through a realistic and feasible approach to meeting the needs of all stakeholders

  - Current maintenance plan for building footprint data is lacking

  - NC 911 Board Orthoimagery Program as a stable source of updates using latest AI-Deep Learning models for feature extraction

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EXECUTIVE SUMMARY

1. **Purpose and sponsorship**
2. **Stakeholders**
3. **Use Case and Value**
4. **Joint responsibility level of effort**
5. **Assumptions**

Recovery and resiliency planning	Property Assets	Disaster Relief damage estimation and recovery assistance
Fire risk, mitigation, and response	Election confidence	Tax assessment
NextGen 911 completeness	NCDOT Project Planning	U.S. Census housing units validation
Broadband Mapping	AddressNC completeness checks	Historic Preservation

GICC	SMAC	DPS-Emergency Management
CGIA; NC Address	NC 911 Board; NG911	NC Board of Elections
Dept. of Insurance	Dept. of Administration	NC Forest Service
NC Office of Recovery and Resiliency	FEMA DHS	OSBM
NC 911 PSAPs	Private Sector	NCDOT
NC DCR	NC Broadband Office	Local government

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BUSINESS CASE AND PURPOSE

1. The driver for need
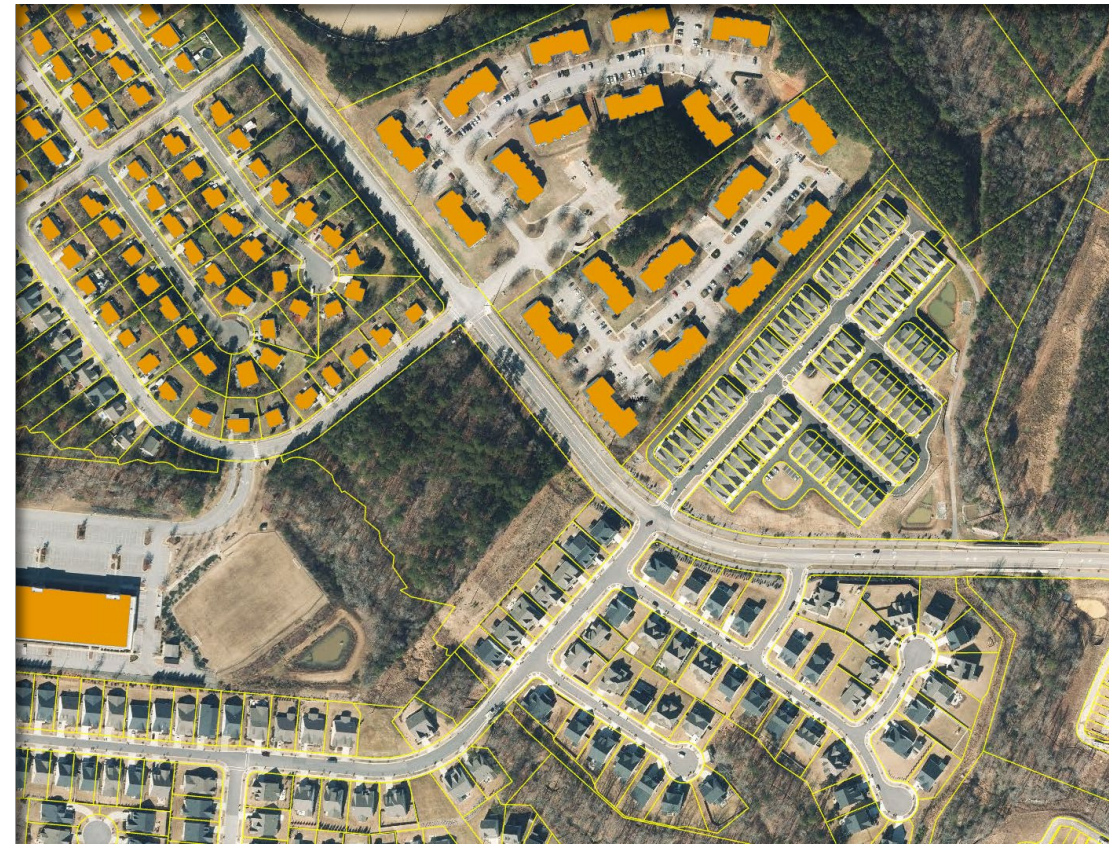
    a) Age

    b) Requirements for existing state agency applications

    c) Demonstrated use by significant state agencies and local government

2. Volume of information

    a) Mandates automation technology

    b) How to manage change

3. Implementation risks

   a) Funding mechanism

    b) Maintenance

    c) Attribution

TECHNICAL ASPECTS

1. **The separation between geometry and attribution**
2. **An automation approach concept**
   - **will be further defined by collaborative, well planned, and detailed supporting workflows**
3. **Identifying a common set of use-case identified attributes**

Core Attribute
Primary key
Tax Parcel Identification Number
Occupancy Type e.g., single family, multifamily, etc.
HAZUS Building Construction Type i.e. Wood, Steel, Concrete, etc.
Year the structure was built
Heated Square Footage
Number of Stories
Imagery derived year
Has structure been removed
911 Address

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TECHNICAL WORKFLOWS

1. Deep Learning/AI workflow for extracting buildings from orthoimagery/lidar
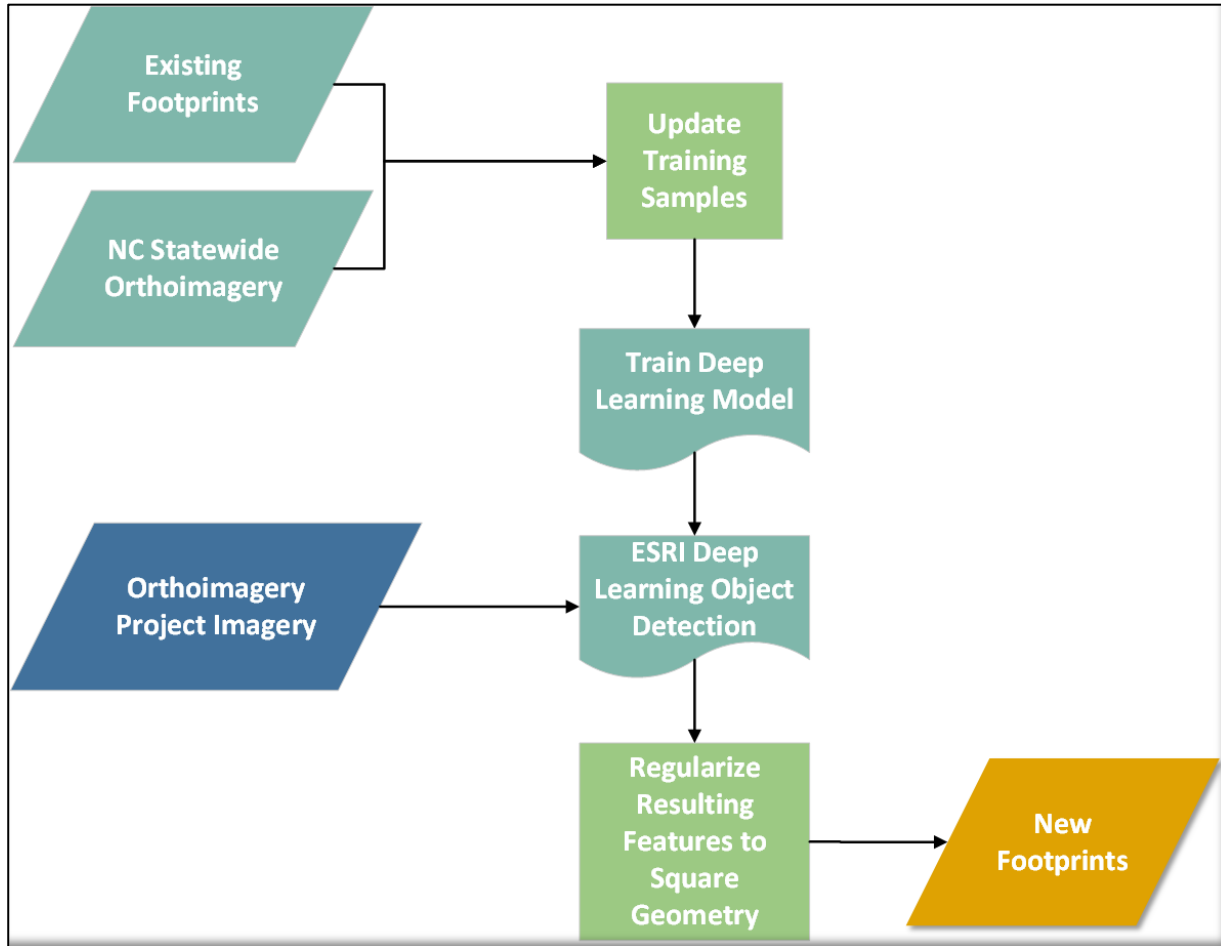
## 2. Using output from 1 to update existing dataset
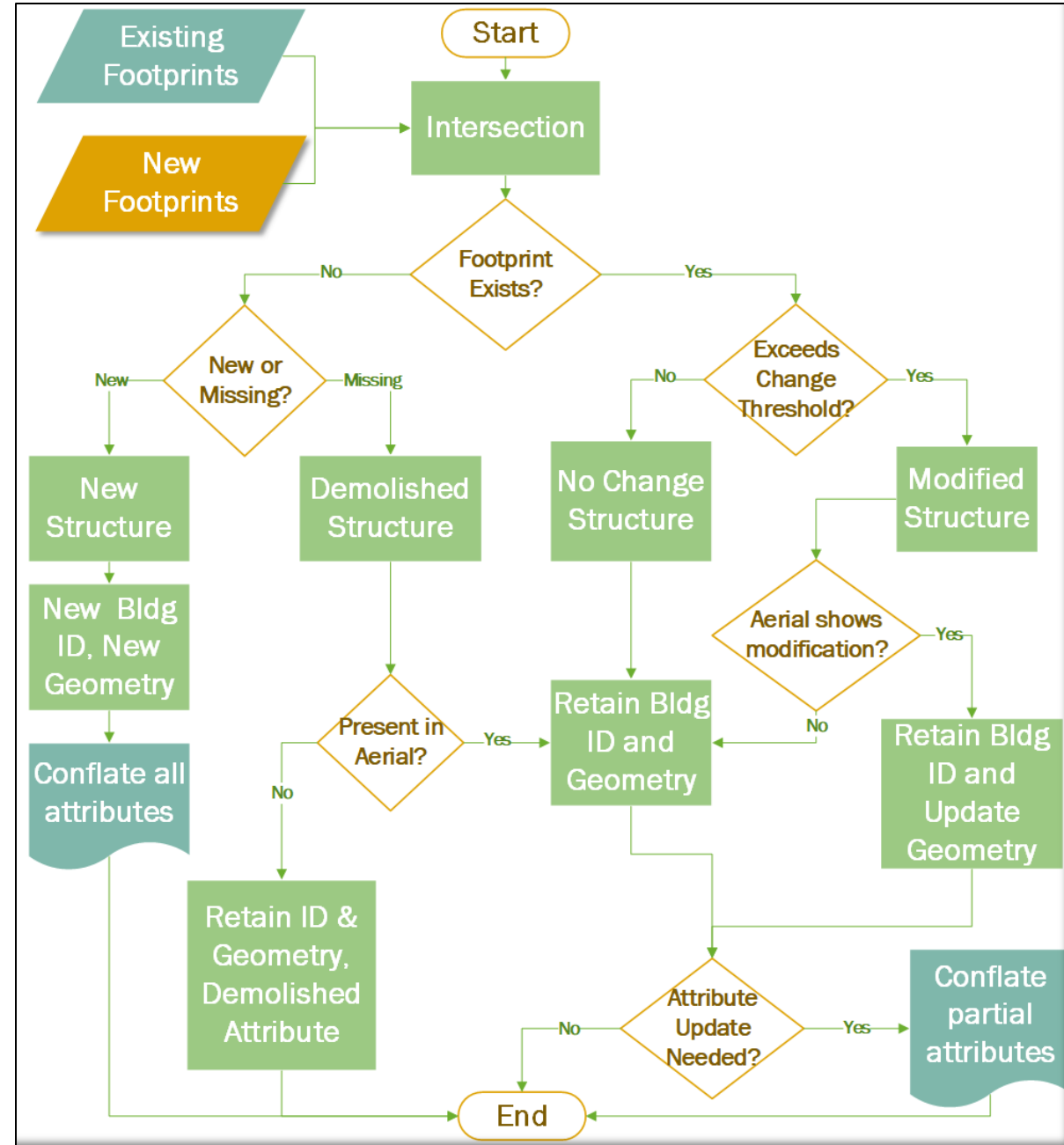
IMPLEMENTATION REQUIREMENTS

1. **Technical requirements/Inputs**
   a) **High confidence (current high-resolution imagery, parcels, addresses)**
   b) **Interim proof of concept (will validate the technical requirements and assumptions)**
2. **Workflows**
   a) **Initial update vs annual maintenance cycle(s)**
   b) **Update will follow the imagery cycle in subsequent years**
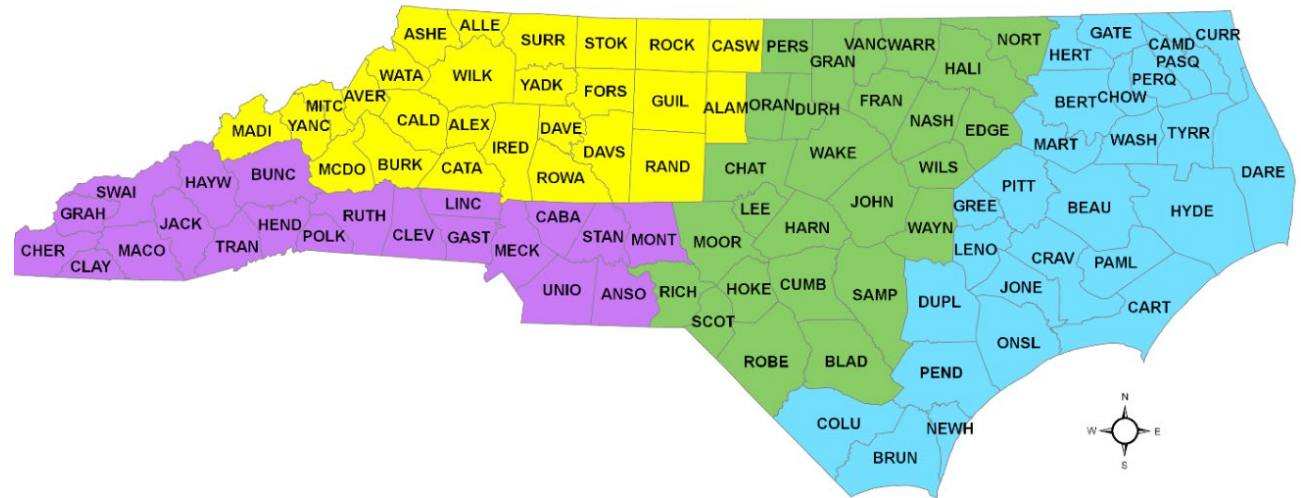
Orthoimagery Acquisition
- Coastal -- 2020
- Eastern Piedmont -- 2021
- Northern Piedmont and Mountains -- 2022
- Southern Piedmont and Mountains -- 2023

NEXT STEPS FOR GICC AND SMAC

1. Ownership identification

2. Decision points – Proof of Concept

3. Funding

4. Start of implementation

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Thank you!

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