

# NC Non-Motorized Volume Data Program (NC NMVDP)

## Phase II Updates

Institute for Transportation Research and Education (ITRE)  
Bicycle and Pedestrian Program



NC STATE UNIVERSITY

May 2<sup>nd</sup>, 2019



North Carolina's Non-Motorized Volume Data Program (NC NMVDP) is a **research project to test a bicycle and pedestrian count protocol and replicate this methodology across the state.**

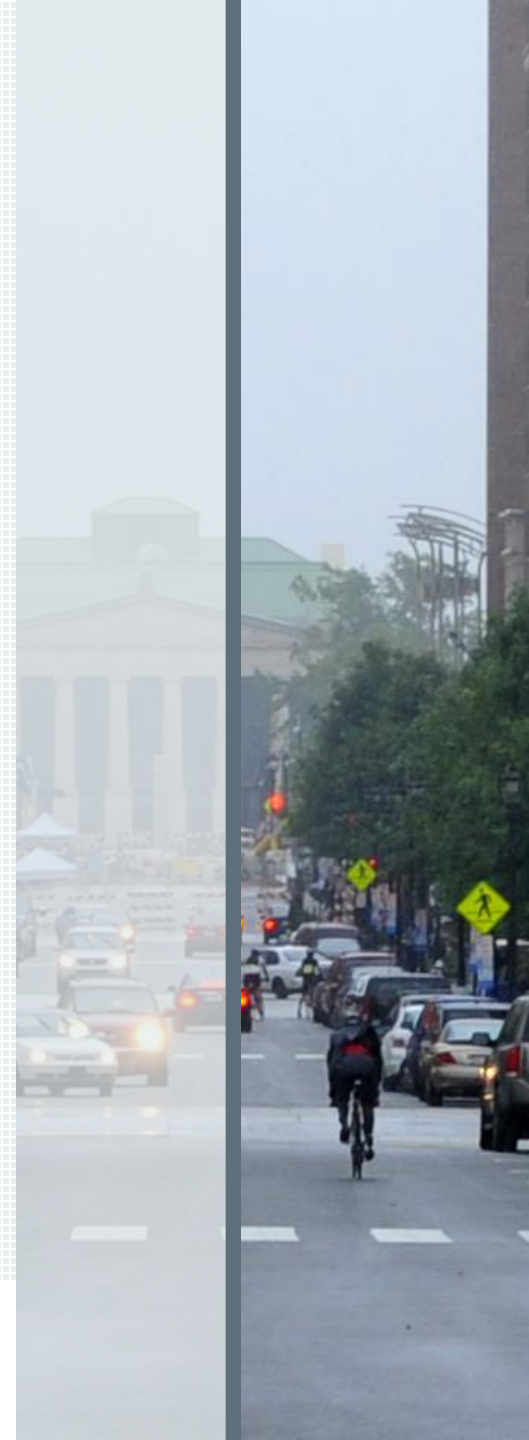


**NCDOT Sponsored  
Research Project**

*What gets measured, gets done.  
If you're not counted, you don't count!*



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# Motivations Behind NC NMVDP

## Use of AADPT and AADBT estimations

- Project Prioritization and Funding
- Planning Decisions
- Complete Streets Policy Implementation
- Operations and Maintenance

Annual Average  
Daily Traffic  
(AADT)

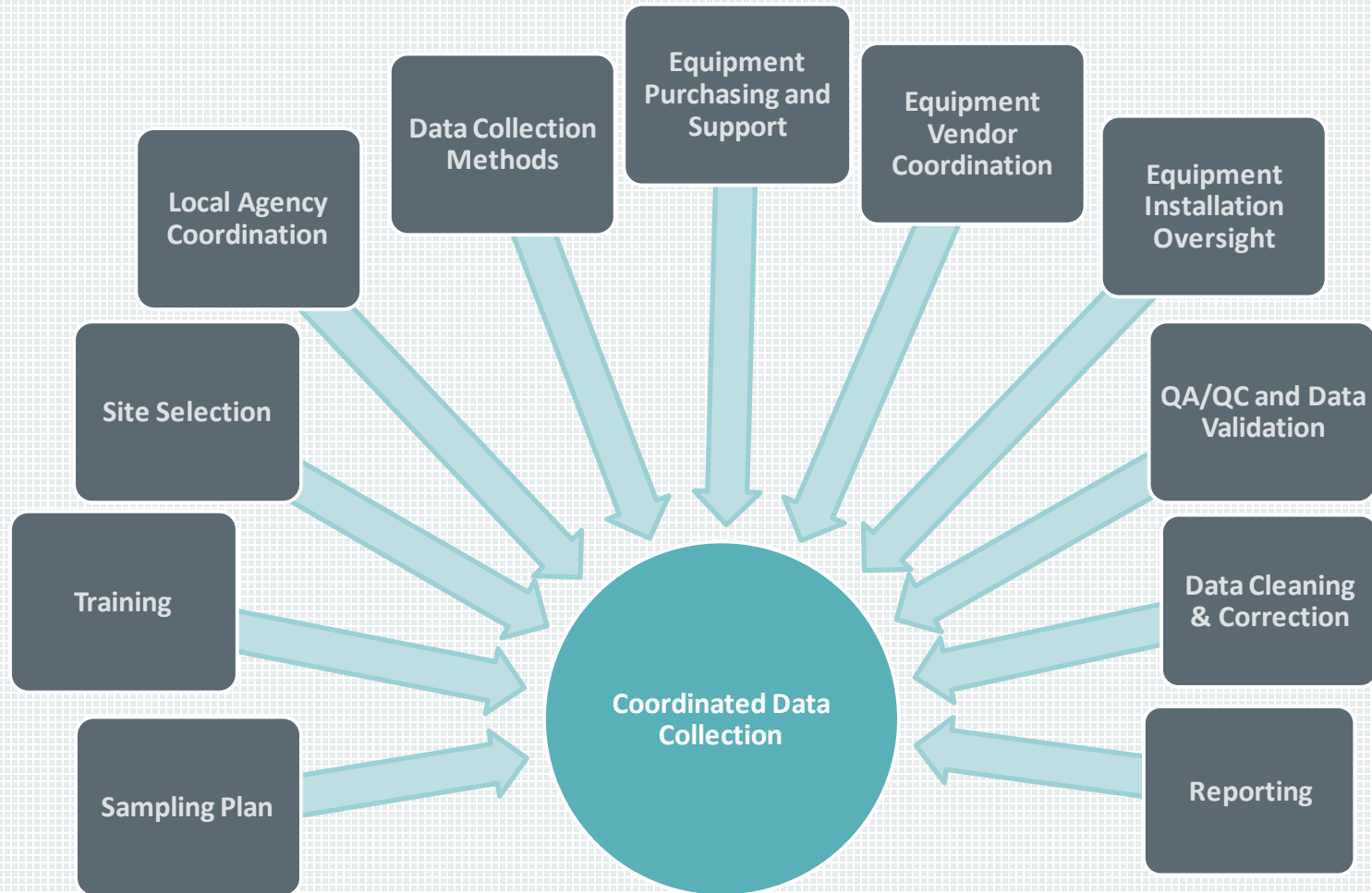
Annual Average Daily  
Pedestrian Traffic  
(AADPT)

## Need common, consistent system to measure volume to:

- Understand current trends and model future usage
- Evaluate at different levels (site, corridor, region)
- Share data

Annual Average Daily  
Bicycle Traffic  
(AADBT)

# Elements of the NC NMVDP

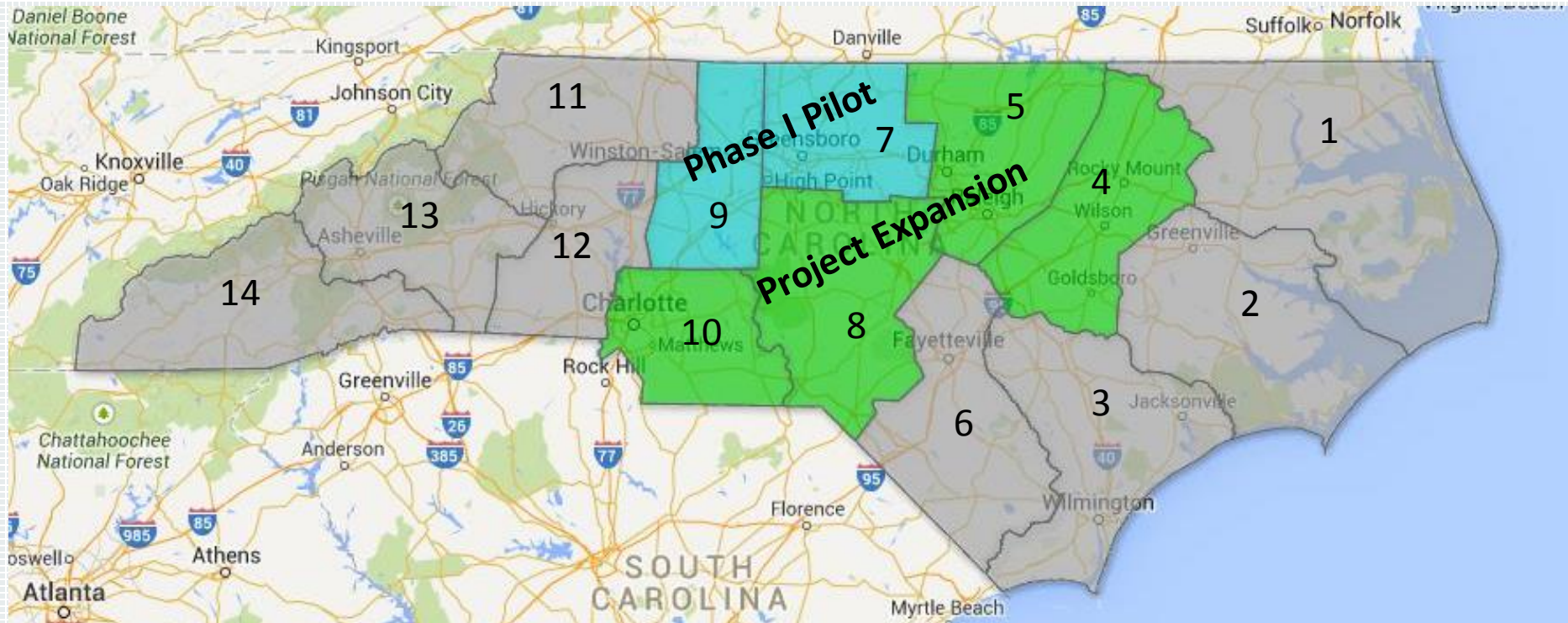


# NC NMVDP Coordination Areas





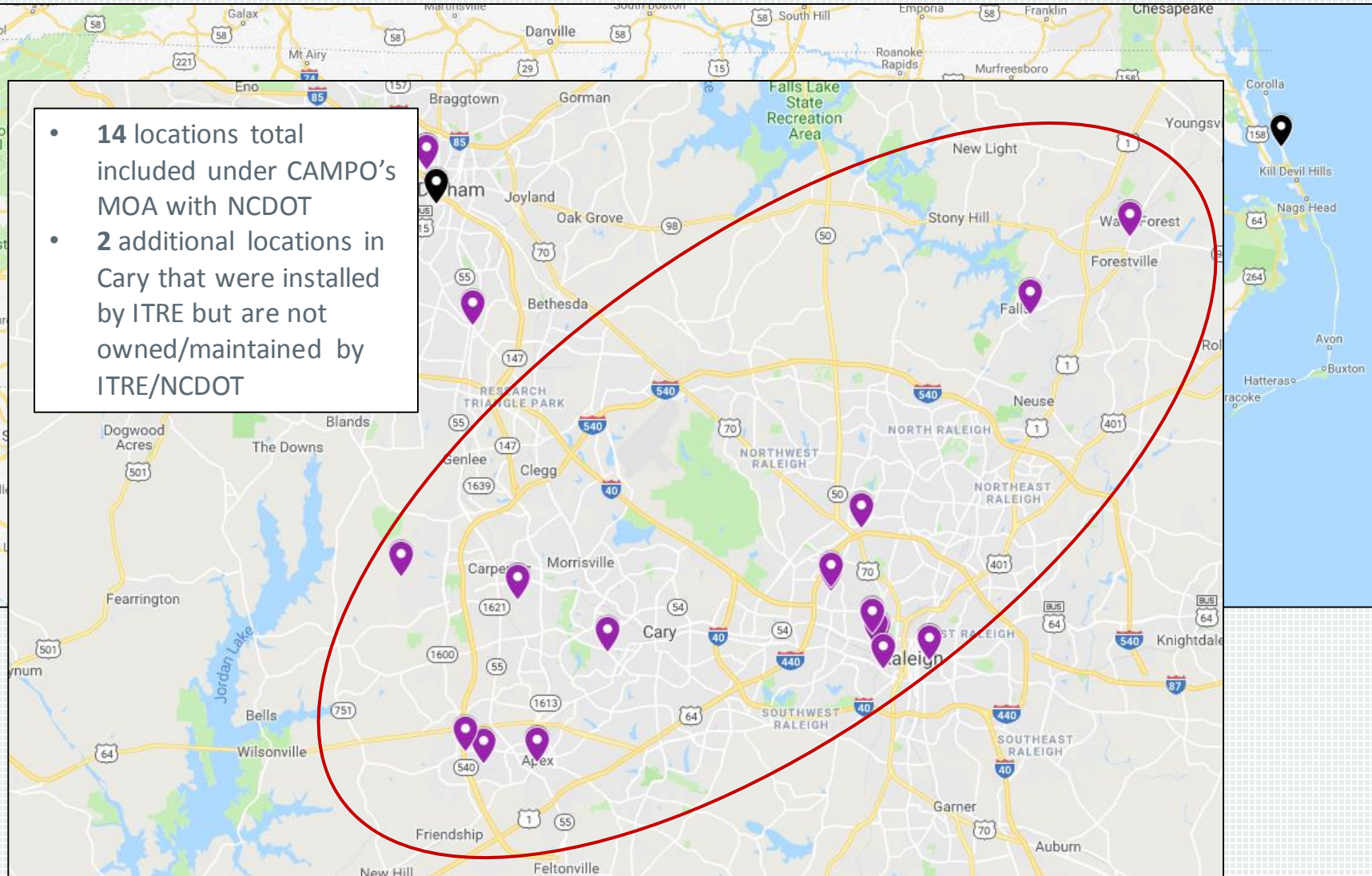
# Phase I (Pilot), Phase II, and Future Expansion



- *November 2013 – Phase I Pilot Project kicks off; Divisions 7 & 9*
- *September 2014 – First counter installed*
- *December 2014 – Phase I installs completed*
- ***April 2015 – Phase II begins; Divisions 4, 5, 8 & 10***
- ***June 2018 – Phase II installs completed; 48 stations installed (71 individual loggers or 141 unique bicycle & pedestrian sensors)***
- ***Future – Divisions 1-3, 6, 11-14***

# NC NMVDP Continuous Counting Locations (as of 2019)

- **14 locations total** included under CAMPO's MOA with NCDOT
- **2 additional locations** in Cary that were installed by ITRE but are not owned/maintained by ITRE/NCDOT



# NC NMVDP Phase II – CAMPO Counter Locations

[Map Link](#)

Cary, NC – 3 locations

Apex, NC – 3 locations

Raleigh, NC – 7 locations

Wake Forest, NC – 1 location

**(14 locations total)**

2 additional locations in  
Cary, NC

- **equipment installed by  
ITRE but not  
owned/maintained by  
ITRE or NCDOT**

City	Location
Apex	Salem St (Saunders St / Chatham St)
Apex	Beaver Creek Greenway
Apex	Olive Chapel Rd (I-540 / Ashley Downs Dr)
Cary	Louis Stephens Dr (Green Hope Elementary)
Cary	New Hope Church Rd (near ATT Trailhead)
Cary	Black Creek Trail
Raleigh	Hillsborough St (Hawthorne Rd / Forest Rd)
Raleigh	Rocky Branch Trail
Raleigh	Ridge Rd (Birnamwood Rd / Lewis Farm Rd / Horton St)
Raleigh	Neuse River Greenway
Raleigh	Cameron St (Daniels St / Oberlin Rd)
Raleigh	Hargett St (Monie Ln / Swain St)
Raleigh	Crabtree Creek Greenway
Wake Forest	Main St (Dunn Ave / East Holding Ave)



# NC NMVDP Phase II – Maintenance Responsibilities

- ITRE/NCDOT is responsible for **non-routine** maintenance of the equipment **until ownership is transferred to the agency** (24 months after the installation date)
  - Battery replacement
  - Replacing malfunctioning equipment
  - Sensor replacement
  - Data transmittal charges
  - Any other non-routine hardware or software maintenance
- The agency is responsible for all **routine** maintenance
  - Including as required by an executed encroachment agreement
  - Could include: removing obstructions/equipment hazards on or near the equipment and monitoring the security of the equipment

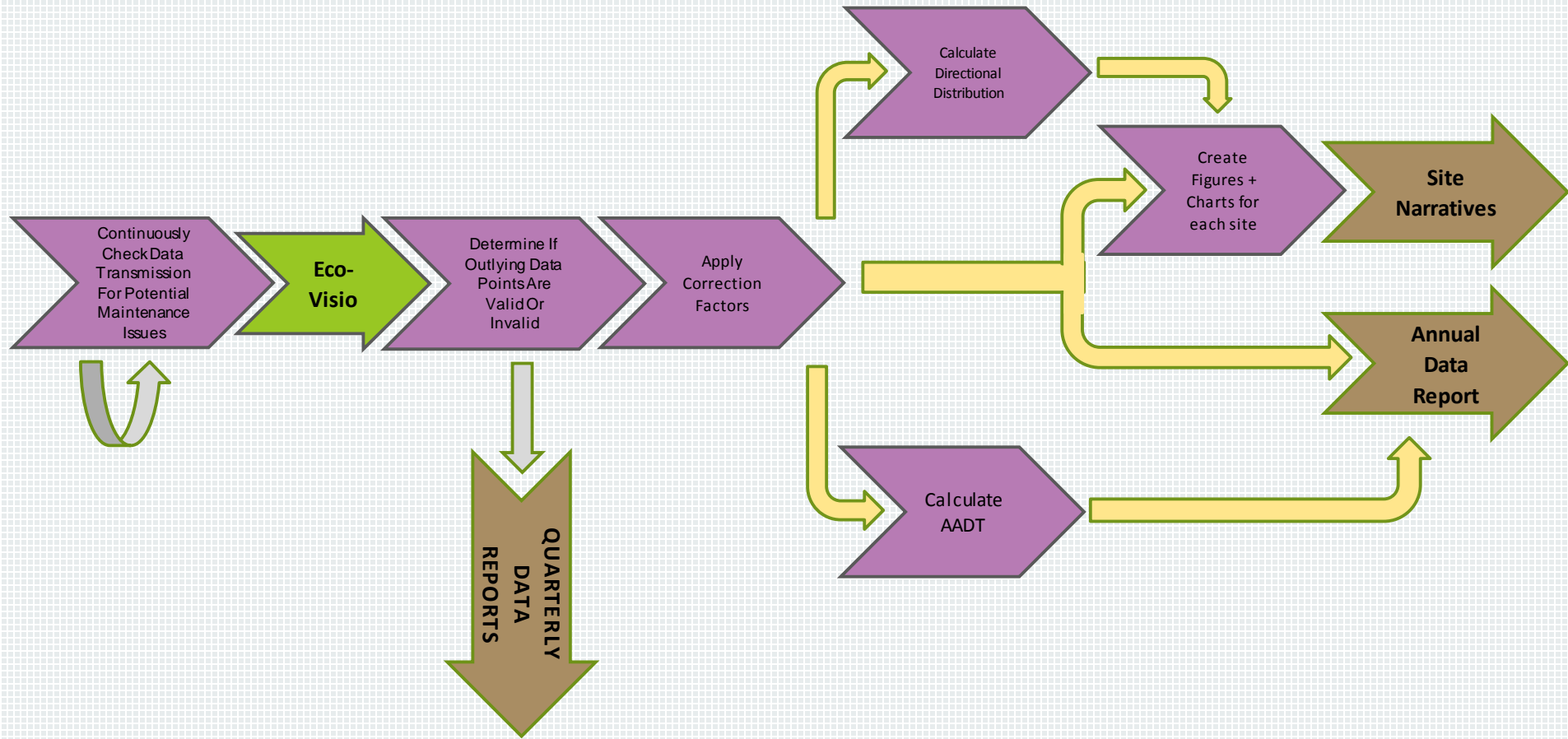
# NC NMVDP Phase II – Data Reporting

- Data is reported to agencies on a quarterly and annual basis
  - Q1: Winter (December, January, February)
  - Q2: Spring (March, April, May)
  - Q3: Summer (June, July, August)
  - Q4: Fall (September, October, November)
- Quarterly data is checked and scrubbed of invalid data resulting from equipment error and provided within 30 days of the last day of a reporting period
- Annual data is one year of cleaned and corrected volume data with a summary statistics report representing the period from December through November
- *Once a counter has been in place through a full program year (December through November), the counter will be included in the annual report and quarterly reports will no longer be provided*

# NC NMVDP Phase II – Data Process

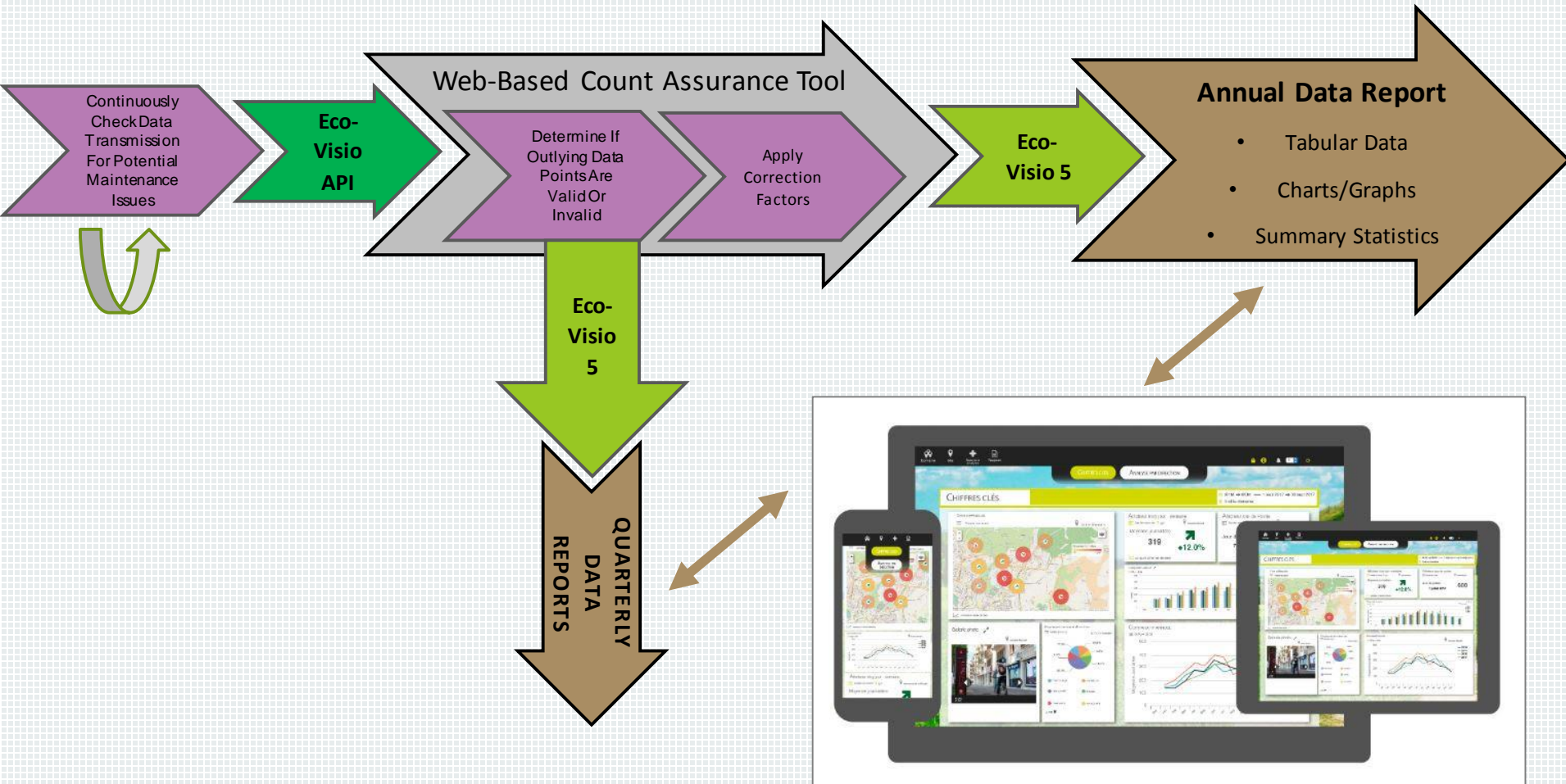
1. Data is Transmitted from Counters
2. Access Data via Eco-Visio
3. Validate Equipment/Data Using Video Cameras
4. Calculate Correction Factors
5. Monitor Data to Identify Potential Maintenance Needs
6. Process Data for Reporting
  - Clean
  - Correct
  - Analyze
7. Create Reports

# NC NMVDP – Data Process (2014 – 2018)



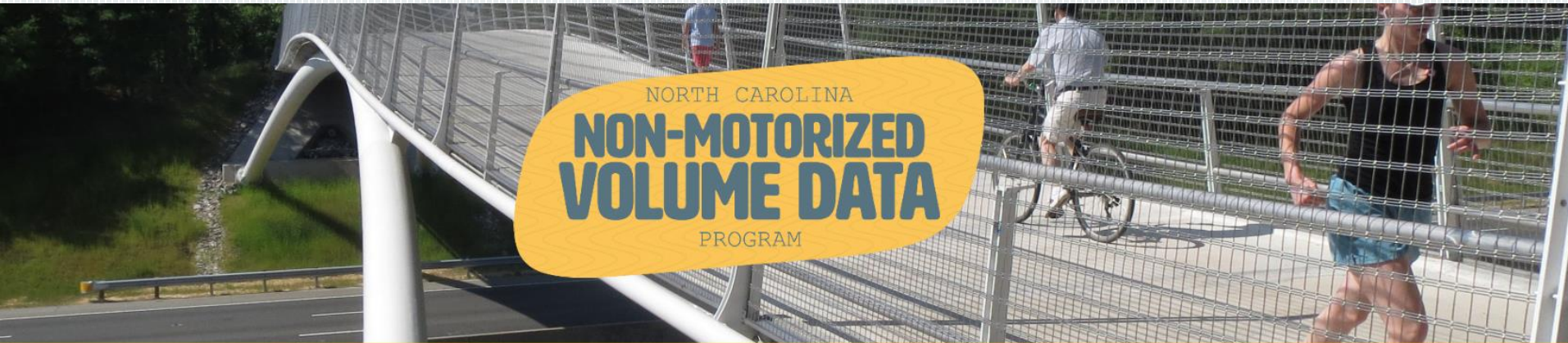


# NC NMVDP – Data Process (Beginning in 2019)



Eco-Visio 5 presents count data collected by Eco-Counters in the form of interactive dashboards that are accessible from a smartphone, tablet, or computer.

# NC NMVDP – Quarterly Newsletter (Beginning in 2019)



## NC Non-Motorized Volume Data Program (NMVDP)

Quarterly Newsletter

April 2019

### Exciting Program Updates!

The NC NMVDP is undergoing exciting changes to improve our internal processes and enhance the products that we deliver to our local agency partners.

Starting this year, we will be:

- Providing regular updates to our local agency partners through our new Quarterly Newsletter.

The newsletter will be used to share regular information on data reports, technical assistance support, training opportunities, and updates to program processes.



## Institute for Transportation Research and Education

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# NC Non-Motorized Volume Data Program

## About

ITRE is assisting the North Carolina Department of Transportation (NCDOT) in the establishment of a statewide bicycle and pedestrian count program. ITRE, NCDOT, and local agencies are working in partnership to install and monitor continuous bicycle and pedestrian count systems on sidewalks, roadways, and shared use paths across the state. This program will evaluate facility usage over time, inform the project prioritization process, provide quantifiable evidence to support multi-modal Complete Streets policies, and improve municipal and regional active transportation planning. The program's resultant datasets can be used in planning tools to measure existing trends and model future non-motorized projections at the site, corridor, and regional levels.

## 2014-2015: Phase I, Pilot

The pilot phase of the NC Non-Motorized Volume Data Program was conducted in NCDOT Divisions 7 and 9 (the Piedmont Triad region) to test a bicycle and pedestrian count protocol and replicate the methodology across the state. Twelve continuous count stations began monitoring bicyclist and pedestrian travel in late 2014. These stations cover a mix of sites across different land uses, travel patterns, and volume groups. Detailed technical information can be found in the Phase I Final Report and Appendices. The following programmatic elements were piloted:

- > Agency Coordination
- > Site Selection and Procurement
- > Equipment Installation and Onboarding
- > Equipment Validation
- > Data Handling, Monitoring and Management
- > Equipment Maintenance
- > Data Reporting

## Documentation and Datasets

- > [Phase I Final Report \[PDF\]](#)
- > [QA/QC Workflow Poster \(Presented at 2016 NATMEC\) \[PDF\]](#)
- > ["Establishing NC's Non-Motorized Volume Data Program" Webinar](#)
- > Topics covered include the purpose of counting bicyclists and pedestrians, current state of practice, site selection, local agency partnerships, and data management.
- > [2015 Continuous Count Station Site Overview and Data Summary \[PDF\]](#)
- > [2015 Continuous Count Station Dataset \[Spreadsheet\]](#)



[Making People Count, 2016 NCAMPO Conference Presentation \(4.82 MB\)](#)



[Continuous Count Station Overview and Data Summary \(10.97 MB\)](#)

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# Thank you!

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