# North Carolina Turnpike Authority

**Operations Committee Meeting** 

July 20, 2023



#### **Operations Committee**

#### **Other Board Members**



J. Eric Boyette Chairman of the Board



James 'Jim' Walker Vice Chair of the Board







Sam Hunt IV Operations Committee Member

Montell W. Irvin

**Operations Committee Chairman** 



Charles 'Chuck' L. Travis III Operations Committee Member

Dr. Pamela

Gibson Senegal

Operations Committee Member

Board



Julie Eiselt Board Member

John Adcock

Board Member

# **Opening Comments**

JJ Eden

Executive Director

# Toll Technology Update

Manish Chourey

Chief Technology Officer

## Statewide Roadside Toll Collection System Contract Overview

- Roadside Equipment, Installation, Testing, and Commissioning for AET and Express Lanes.
- Testing Lifecycle will be done for each Project.
- Selection based on annual planning at the sole discretion of NCTA for projects. NCTA may solicit quotes from one or more Vendors.
- Base Contract Term 5 years from Notice of Award Selection of one or more Vendors (bench).
- Task Order Term
  - ✓ Implementation Phase
  - ✓ 5-year maintenance (after Go live of each Task Order)
  - ✓ Two 3-year Extensions

#### Statewide Roadside Toll Collection System Procurement – Timeline

Category	Date
✓ RFP Issued	January 20, 2023
✓ Mandatory Pre-Proposal Scope of Services Meeting	February 2, 2023 (1:00 p.m. to 2:00 p.m. EDT).
✓ Proposer Questions Due	February 17, 2023 (4:00 p.m. EDT)
Proposals (Technical and Price) Due	July 27, 2023 (4:00 p.m. EDT)
Notification of Proposers Shortlisted for Oral Presentations	August 25, 2023
Oral Presentations and Interviews	Week September 11, 2023
Ranking of Proposers for Negotiations	End of September 2023
Notice to Proceed / Award of Contract	October 2023

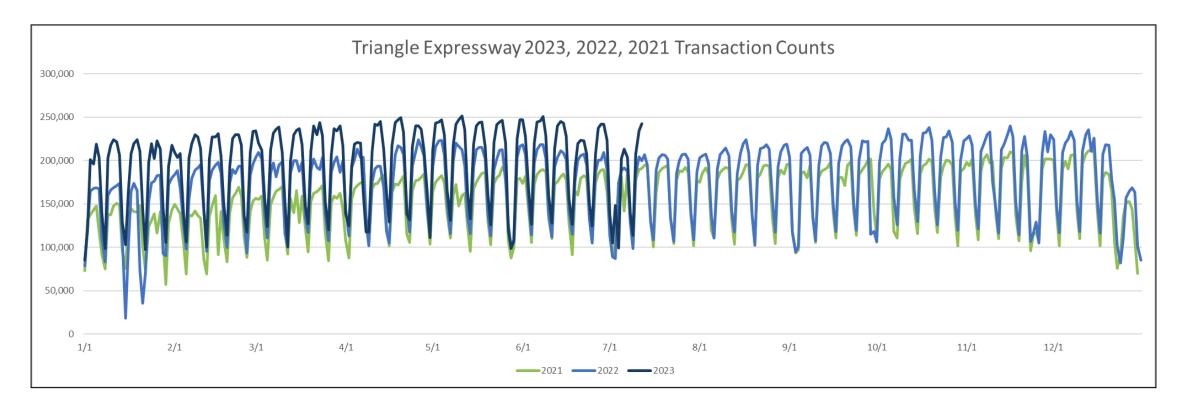
### Statewide Roadside Toll Collection System Key Scope of Work

- NCTA to issue Project Scope of Work for each Project Task Order for qualified Vendors to design, test, install, and commission RTCS systems.
- Project Task Orders will include Project Implementation Schedule Milestones (Attachment 11).
- Contractor to provide Transaction Reconciliation Host (TRH) to interface with NCTA OBO/CBOS.
- > NCTA Continuous improvement (Dev-Ops) and Change and Release Management process.
- Proven existing solution with a product roadmap.

#### **Triangle Expressway Traffic - Updates**

#### **Traffic Increase**

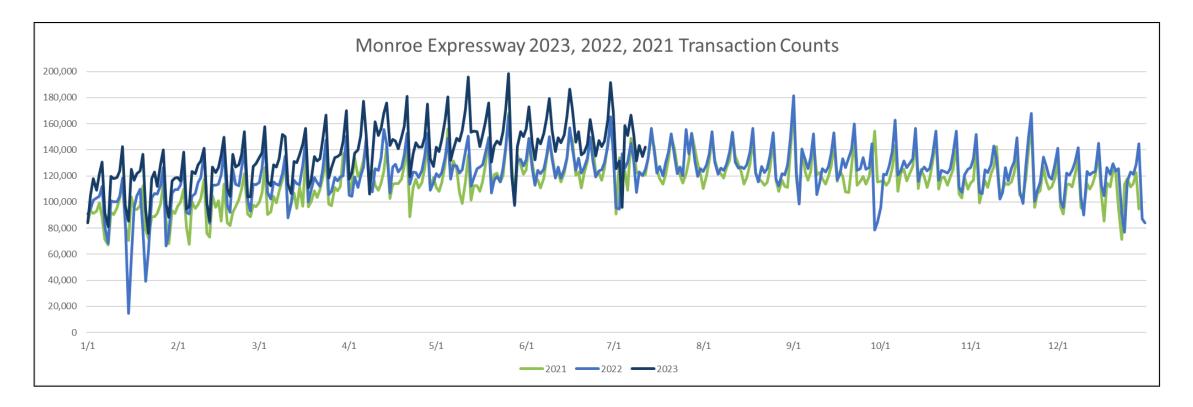
2021 – 2022 Q2 – 12.3% 2022 – 2023 Q2 – 11.1%



#### **Traffic Increase** 2021 – 2022 Q2 – 4.0%

2022 – 2023 Q2 – 14.8%

#### Monroe Expressway Traffic - Updates



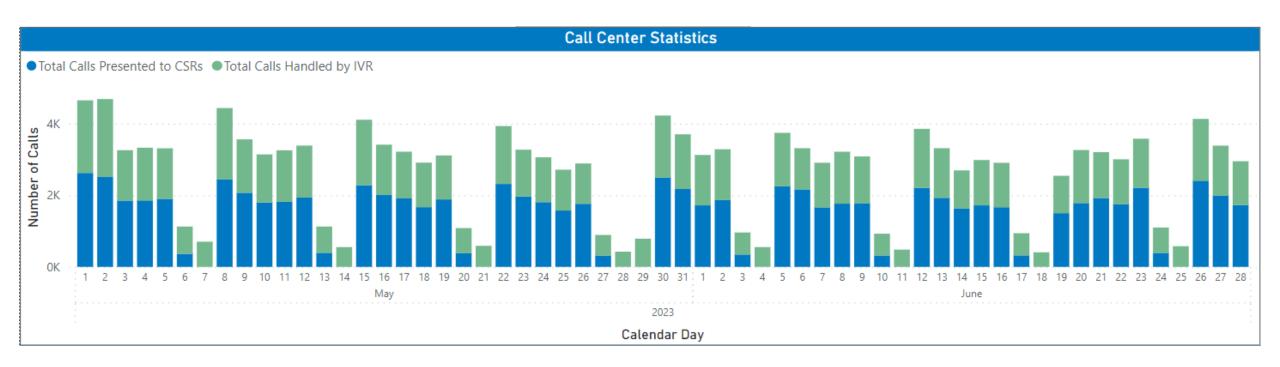
# **Customer Service Center Update**

#### Angela Queenland

Manager of Customer Service

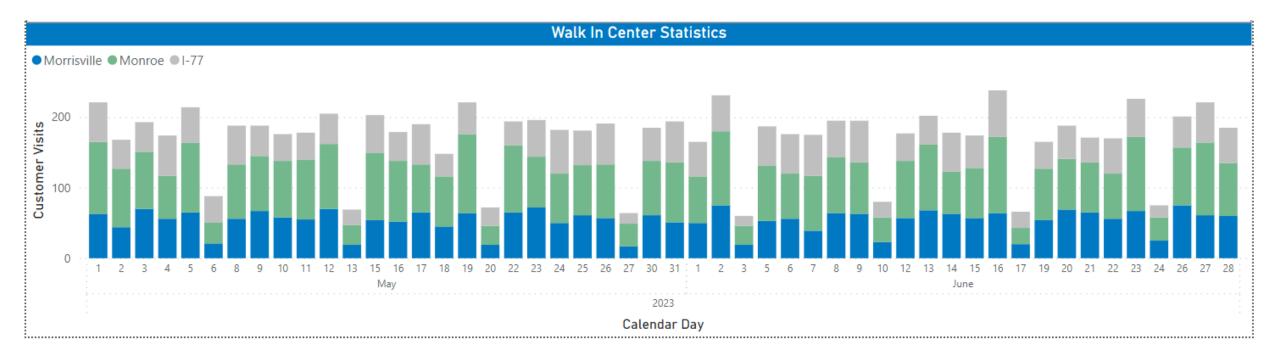
## **Call Center Statistics**

NC Quick Pass Program

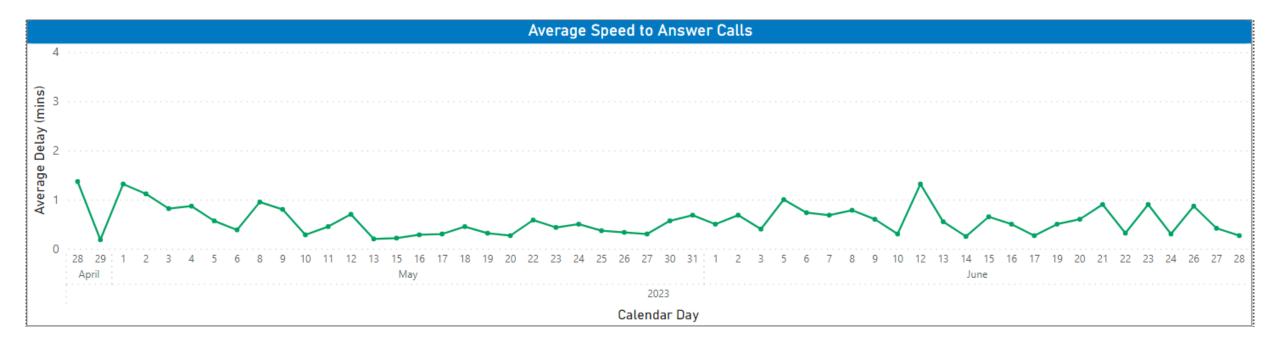


## Walk-In Center Statistics

NC Quick Pass Program



# Average Speed to Answer Calls



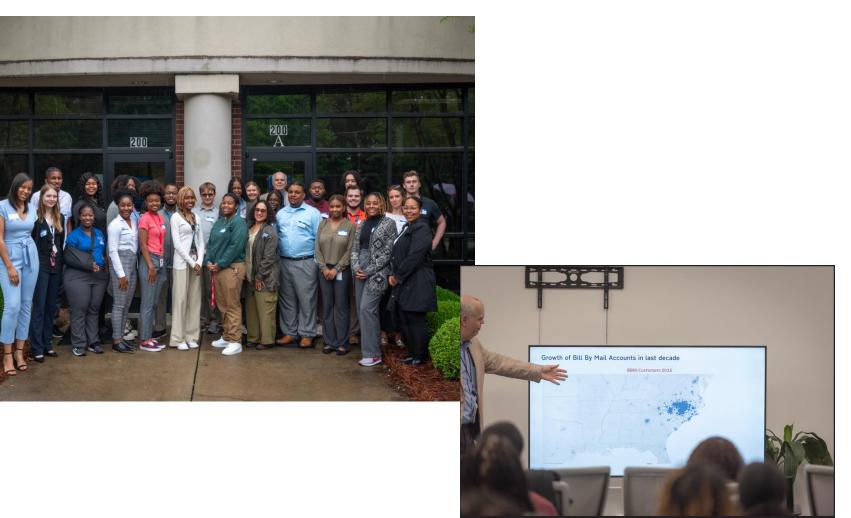
# Average Call Handle Time

Average Call Handle Time 15 Average Handle Time (mins) 0 28 23 24 25 26 31 10 12 13 14 15 16 17 19 20 21 22 19 20 22 27 30 23 29 16 Apri 2023 Calendar Day

# HBCU NC Quick Pass Operations Tour

## **HBCU Intern and Fellow Tour**

NC Quick Pass Operations Center



## **HBCU Intern and Fellows Tour**

**NC Quick Pass Operations Center** 



# Marketing & Communications Update

#### Logen Hodges

Marketing & Communications Director

# BOS 2 Update

## NC Quick Pass App Launch Schedule

#### June 28 –

- Email to existing HOV app users
- New app available for download
- HOV website alert
- HOV app alert and functionality
- Email and press release announcement (English & Spanish)

#### August 1 –

- HOV app retirement
- HOV website redirect
- HOV app data migration Begins

Important! New App for NC Quick Pass

## Our HOV App is Retiring!

QUICK



(QUICK PASS



### Customer Email Campaign

## **Email Performance**

- 650k Emails Sent
- 75% Open Rate
- 15% Clicks

#### New App Available for NC Quick Pass Customers



#### What's new

The **new NC Quick Pass app** is available for download on the **Apple App Store** and through **Google Play**. The NC Quick Pass app allows you to easily manage an account including, ordering a new transponder or adding a new vehicle. The new app can also be used to set HOV status to travel free in the I-77 Express Lanes if the **HOV requirements** are met. Customers without an account now have the option to pay their Bill by Mail invoice with the app. Everything NC Quick Pass in one place!



#### **Old HOV app**

The NC Quick Pass HOV app and HOV website will be retired and unavailable for use starting August 1. If you plan your travel far in advance please reschedule those trips using the **new NC Quick Pass app**.

#### **Stay informed**

We are excited to bring you another improvement to the customer experience. For the latest information, please visit the **NC Quick Pass app webpage**.

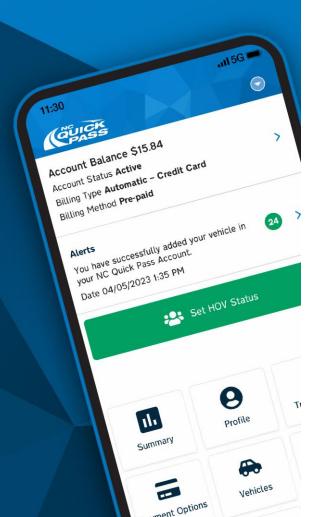
Thank you for your business.

Sincerely,

NC Quick Pass



# One app to pay your tolls



#### NC Quick Pass App Statistics as of 7/14/2023

## **Apple App Store**

- 56K Downloads
- 58% Web Referral
- 26% App Store Search

## **Google Play**

- 15K Downloads
- 76% Web Referral
- 15% Google Play Search







# **Chief Engineer Update**

Dennis Jernigan, P.E.

Interim Chief Engineer

### NCDOT HBCU Program Complete 540 Tour June 20, 2023

- HBCU Interns and Fellows toured Phase 1 of Complete 540
- Included NCTA intern and NCDOT TEA on the tour





## NCTA Interns Complete 540 Tour July 11, 2023

 NCTA Interns toured Phase 1 of Complete 540





# Complete 540 Phase 1

#### Pierce Olive Road Bridge Opening



#### Sauls Road Bridge Opening



#### **Bridge & Culvert Construction**



#### Toll N.C. 540 Mainline



#### Old Stage Road Bridge and Concrete Plant



#### Noise Wall Construction



#### Turbine-Style Interchange



## **Complete 540 Openings**

- Sauls Road 0
  - June 2023
- **Pierce Olive Road**  $\bigcirc$  $\bigcirc$ • May 2023
- **Old Stage Road** Ο
  - April 2023
- West Lake Road  $\bigcirc$ • March 2023
- **Relocated Rolling** Ο Farm Drive
  - o January 2023
- **River Falls**  $\bigcirc$ Pedestrian Trail and Culvert
  - November 2022

- Sunset Lake  $\bigcirc$ Road (1 of 2)
  - November 2022
  - **US-401** 
    - November 2022
  - Holland Church 0 Road
    - September 2022
    - Lassiter Road and Wooded **Acres Street**
    - August 2022
    - **NC-50** • August 2022

0

0

- **Deerborn Drive** Extension
  - July 2022

- New Bethel 0 Church Road
  - July 2022
- Kildaire Farm  $\bigcirc$ Road
  - May 2022
  - Johnson Pond
    - April 2022

 $\bigcirc$ 

0

- Fanny Brown Road
  - November 2021

#### Activity



North Carolina Department of Transportation 🥑 Communications Director Logen Hodges • Edited 5 Jun

Complete 540 - Opening Sauls Road.

Hey Neighbors! On June 2, Sauls Road north of Community Garden Road and south of Pondsedge Trail reopened to traffic. Detour signs and barricades have been removed, and motorists once again have full access to the road.

Construction updates for the Complete 540 project can be found by visiting https://www.ncdot.gov/projects/complete-540/Pages/planned-constructionactivities.aspx. If you have any questions, please contact the project team at complete540@ncdot.gov or 1-800-554-7849.

Posted to Subscribers of North Carolina Department of Transportation in 22 neighborhoods

4 · 966 Impressions

🗘 Like

🗘 8 Comments 🛛 🖒 Share



North Carolina Department of Transportation 🥑 Communications Director Logen Hodges • 3 May

Complete 540 - Opening Pierce Olive Road.

#### Hey Neighbors,

On or around May 5, Pierce Olive Road between Bamburgh Lane and Olive Tree Lane is scheduled to reopen to traffic. Detour signs and barricades will be removed, and motorists will once again have full access to the road. The reopening of this road is weather dependent.

Construction updates for the Complete 540 project can be found by visiting ncdot.gov/projects/complete-540/Pages/planned-construction-activities.aspx. If you have any questions, please contact the project team at complete540@ncdot.gov or 1-800-554-7849.

Posted to Subscribers of North Carolina Department of Transportation in 15 neighborhoods

🗘 Like

● 4 · 467 Impressions

🗘 1 Comment Share

# Complete 540 Phase 2

#### R-2829B

		_
RFQ Advertisement	November 15, 2022	$\checkmark$
Statement of Qualifications due from Design-Build Teams	December 20, 2022	<ul> <li></li> </ul>
Department Announces Short-listed Teams	January 18, 2023	<ul> <li></li> </ul>
Department Issues Industry Draft RFP to Short-listed Teams	January 18, 2023	<ul> <li>Image: A start of the start of</li></ul>
First Meeting with Short-listed Teams	February 1, 2023	$\checkmark$
Department Issues Second Industry Draft RFP to Short-listed Teams	February 15, 2023	$\checkmark$
Demonstration of Halls Statement of One life office Dalatic	Wests of Falsen and 20 2022	
Department Holds Statement of Qualifications Debriefs	Week of February 20, 2023	
Second Meeting with Short-listed Teams	March 1, 2023	~
8		
Department Issues Final RFP to Short-listed Teams	March 22, 2023	~
Technical Proposals and Fuel Usage Factor Chart / Estimate of Quantities Due	August 8, 2023	
		4
Sealed Price Proposals Due	August 22, 2023	-
Technical Presentations by Short-listed Teams	August 23, 2023	
Open Price Proposals	August 29, 2023	-
Department Holds Technical Proposal Debriefs (Pending Contract Execution)	Week of October 2, 2023	



NOTE: All dates are approximate and subject to change.

## R-2829A

RFQ Advertisement	February 1, 2023	<b>&gt;</b>
Statement of Qualifications due from Design-Build Teams	February 28, 2023	<b>~</b>
Department Announces Short-listed Teams	March 16, 2023	<b>×</b>
Department Issues Industry Draft RFP to Short-listed Teams	March 16, 2023	
Department issues industry Dratt NeT to Short-Insted Teams	March 10, 2020	
First Meeting with Short-listed Teams	April 4, 2023	~
	W. 1. 64. 11.47.0000	
Department Holds Statement of Qualifications Debriefs	Week of April 17, 2023	$\checkmark$
Department Issues Second Industry Draft RFP to Short-listed Teams	April 18, 2023	~
Second Meeting with Short-listed Teams	May 4, 2023	
Department Issues Final RFP to Short-listed Teams	May 16, 2023	~
Technical Proposals and Fuel Usage Factor Chart / Estimate of Quantities Due	September 26, 2023	
Sealed Price Proposals Due	October 10, 2023	
Technical Presentations by Short-listed Teams	October 11, 2023	
Open Price Proposals	October 17, 2023	-
Department Holds Technical Proposal Debriefs (Pending Contract Execution)	Week of November 27, 2023	

NOTE: All dates are approximate and subject to change.

## **Complete 540 Phase 2 - Preconstruction Activities**

#### **Completed Activities**

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- Environmental Document
- Section 404/401 Corridor Permits
- Biological Opinion
- Air Quality Conformity
- Final Surveys
- Traffic Forecasts and Analysis
- Service Road Study
- Confirmation of Environmental Mitigation Availability

- Roadway and Structure
- Geotechnical Investigations
- Update Project Cost Estimate
- Refining Preliminary Design
  - Developing Pavement Design and Life Cycle Analyses
- Railroad Coordination
  - Industry Coordination

#### **Activities Underway**

- Advanced Acquisition of Certain Right-of-Way Parcels
- Coordination with Owners of Towers Regarding Needed Relocations
- Planning for Community Water and Sewer Conflict Resolutions
- Planning for Other Long Lead-Time Items
- Utility Coordination
- Developer Coordination
- Refine Plans for Right-of-Way Acquisition
- Design-Build Procurement

# **2023 Intern Presentations**

Travis Feltes, P.E.

Project Engineer

# Toll Technology Interns



# Ben Scott

Technology Intern

- Graduating Summer 2023
- East Carolina University
- Bachelor of Science
- Information and Computer Technology

# Project



Extract, transfer, load process with data using AWS products

## Problem and Goal

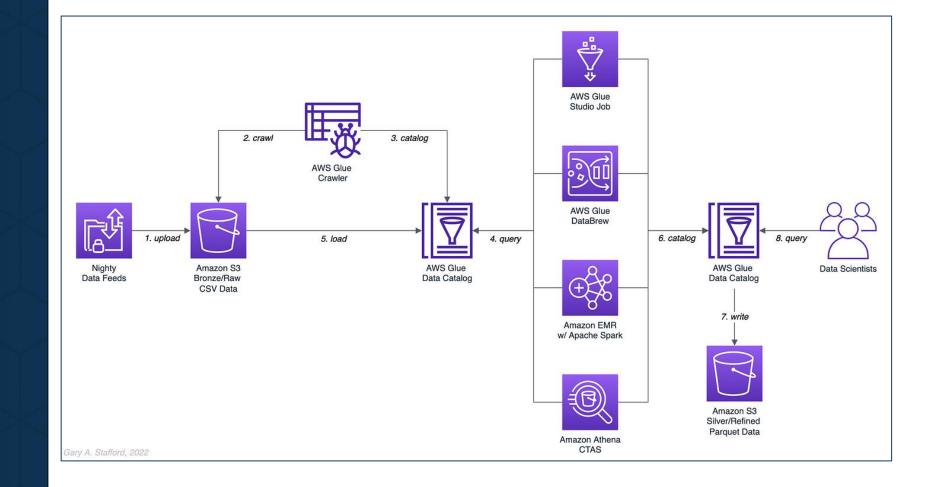
- Vendors that provide data use different formats and layouts.
- The goal is to unify all data submitted by different vendors so that it can be interpreted and analyzed efficiently on NCTA owned systems.

Q Filter schemas		
#	▼ Column name	▽ Data type
1	transactionid	bigint
2	subscribeid	bigint
3	transactiondatetime	string
4	facility	string
5	tollzone	string
6	lane	bigint
7	vehicleclass	bigint

Schema (53) View and manage the table scher	ma.	
#	▼ Column name	▼ Data typ
1	vehicletrxid	bigint
2	plaza	string
3	lane	bigint
4	trxtime	string
5	lanemode	string
6	facilityid	bigint
7	transactionflag	bigint
8	degraded_flg	bigint

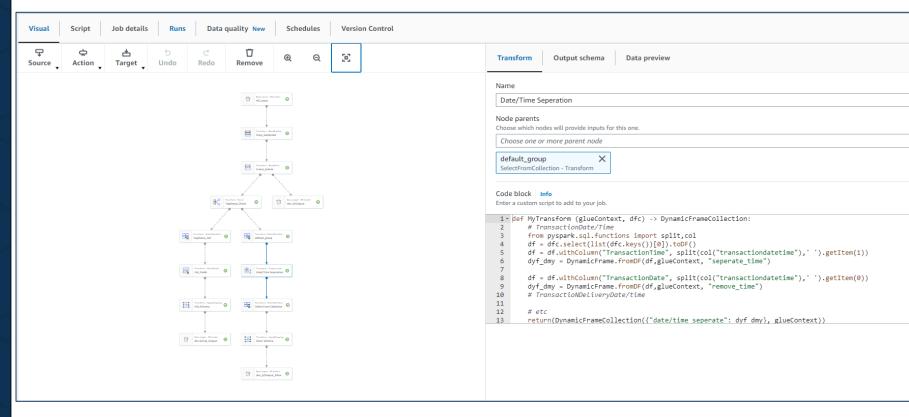
# **ETL Project**

- Raw data is sent to the "input" folder where it is then run through AWS Glue table crawler to form a schematic of the data and placed in the data lake as bronze data
- Data is then transformed using both AWS Glue and Databrew to form clean and readable data.



# ETL Project AWS Glue

- Transform Raw data/Bronze > Silver > Gold using AWS Glue and Python
- Use of Crawlers to create tables and schematics for data transformations



output_silver/		dev-a-run									
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🗌 🗋 run-1687967473813-part-r-00006 - Jun	e 28, 2023, 11:51:42 (UTC-04:00)				4150						
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# ETL Project AWS Glue (cont)

 AWS Databrew provided visual analysis as well as the ability to modify fields, change value types, and more before the data was saved and sent back into the data lake

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# Nicholas Clark

Technology Intern

- Graduating Spring 2024
- Clemson University
- Bachelor of Computer Science

# Project



Optimizing, debugging, and refactoring the Image Audit Tool

### Dashboard

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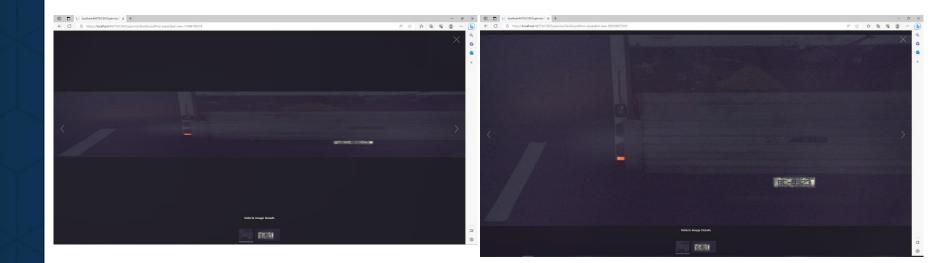
# Image Audit Tool

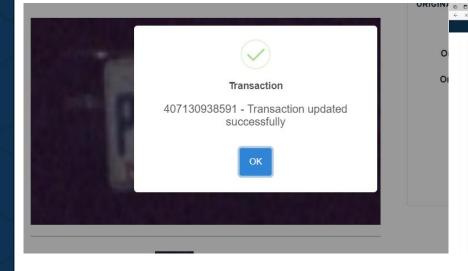
# Image Audit Tool: Optimization

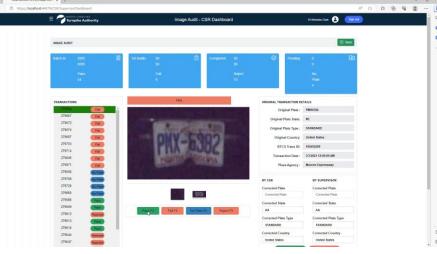
- Made optimizations to the website based on feedback and input from the CSRs and management.
- Fixed issue with magnified/enlarged images.
- Fixed issues with transaction updates and their intrusiveness.

### Original

### Optimized







# Image Audit Tool: Debugging

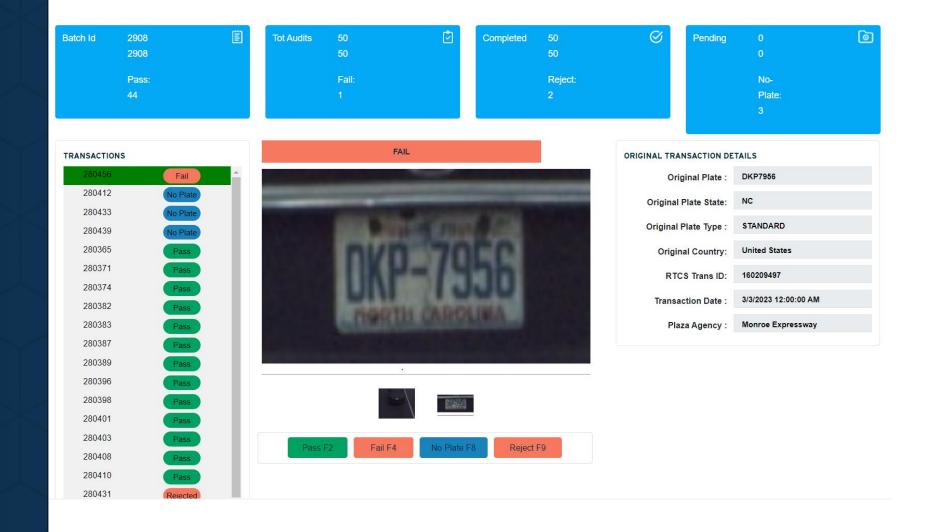
- Worked with Charity and other CSRs to debug issues that were occurring with the current version.
- Bad slowdown, transaction skipping, login failures, and new version updates.

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- T01_02N202306100202299	* Response Headers	11111111111
- T01_02N202306100202299	Cache-Control:	private
T01_02N202306100202299	Content-Length:	private 3490 text/html; charset=utf-8
T01_02N202306100202299	Content-Type:	Mon 19 Jun 2023 19:28:16
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# Image Audit Tool Refactoring

• Overhauled the header values and how the backend system receives them.



# **Communications Intern**



# Meah Osborne

Communications, Marketing and Graphic Design Intern

- Millers Creek, NC
- North Carolina State University
- December 2023 Graduate
- Communications, Public Relations, Business
   Administration

# **Projects**



### Creative and Internal Trainings



#### Complete 540



#### Social Media Calendar



NC Quick Pass App Ad Campaign

### Creative and Internal Trainings





Technical Writing



Presenting



Workplace Best Practices

# Complete

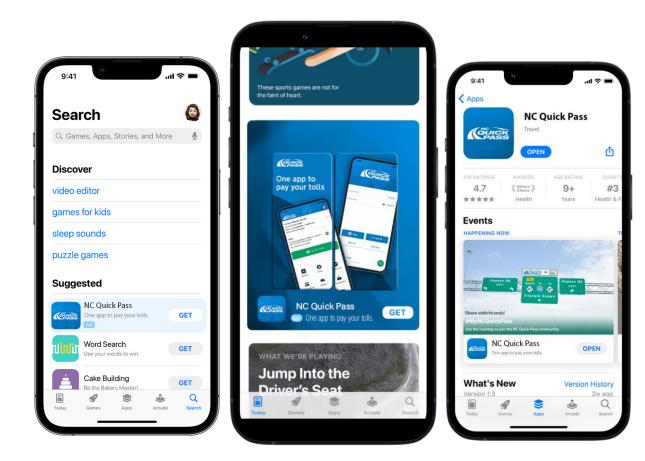


# Social Media Calendar

Posting Date	Platform	Subject	Content	Creative	Hashtag/Tags
July 3	RT: Twitter	Independence Day	Going on a trip for the Fourth of July? Save time and money traveling with a #NCQuickPass transponder and start the holiday off right!	Cont I miss the Forworks with NC Quick Pass	#July4th #NCQuickPass
July 4	Twitter	Independence Day	Wishing you a happy Fourth of July!	Happy 4th of July!	#4thofJuly



# NC Quick Pass App Ad Campaign



# NC Quick Pass App Ad Campaign



# **Construction Intern**



# Thomas Smith

Construction Engineering Intern

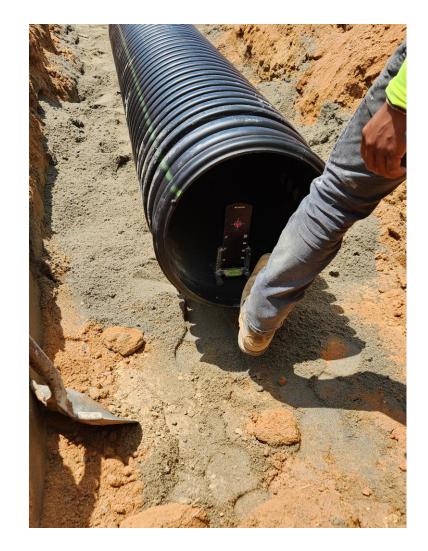
- Junior at North Carolina State University
- Class of 2025

# **Projects**



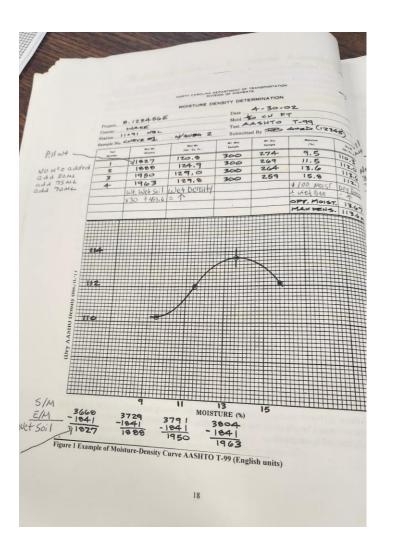
# Drainage

- Learned the basics of drainage systems and how they are installed
- Learned multiple aspects of trench safety



## Soil

- Conducted a variety of tests to find various soil factors such as soil density, optimum moisture content, and moisture density curves
- Learned the importance of soil density and how to achieve optimum density through various mechanical means





## Concrete

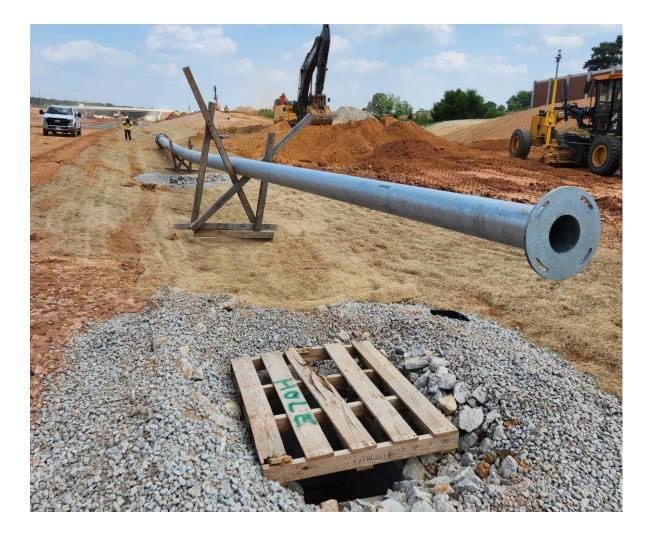
- Discussed and practiced performing various testing techniques to assess concrete including slump, chace, and air pot tests
- Learned the basics of when and how concrete should be poured based off of time and other environmental conditions





# Lighting

- Learned how to read electrical and lighting plans
- Dealt with multiple conflicts of interest while observing the construction of lighting systems



# Structures

- Learned how to read structure documents and correlate plans to rebar structures
- Learned how to effectively communicate with foremen and supers



# Leaning Tower

 Lots of things can go wrong in the field. An important thing I've learned, is how to handle these issues when they come up.



# **Contact Us**

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# Thank you!