

New Hanover County Schools:

Improving Daily Operations by Embracing Better Data Management Practices

*15th Annual
Student Transportation Leadership
Conference*

February 2020



New Hanover County Schools: Background

Improving Daily Operations by Embracing Better Data Management Practices

Session Outline

- North Carolina TIMS
- New Hanover County Demographics and School Information
- Previous Data Management Practices
- Staff Change and Reevaluation of Methods
- Developing New Methodology
- Fulfilling Daily Stops Requests
- Processing Student Bus Passes
- Managing School, Program and Student Irregularities
- Use of TIMS School Code Replacement Database
- Summary of Data Management Improvements

Background



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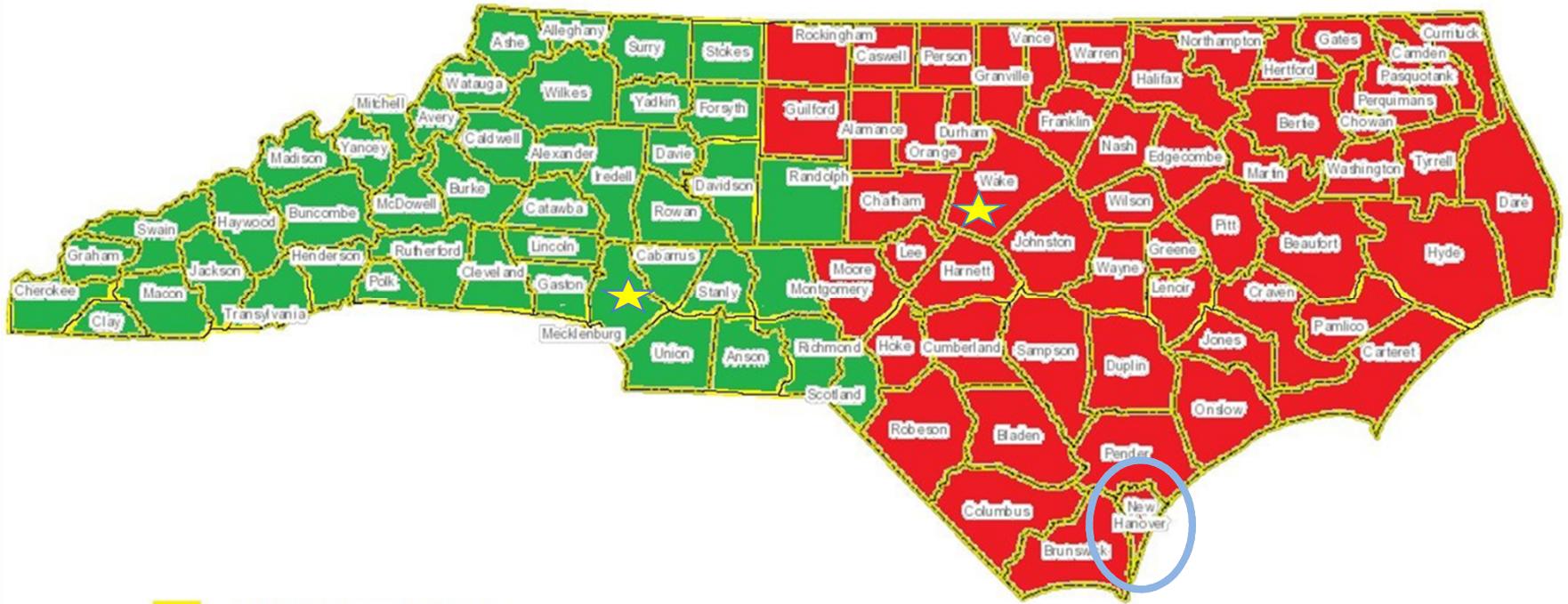
New Hanover County Schools: Background

School Bus Routing in New Hanover County, North Carolina

- North Carolina is the only state with equivalent School Bus Routing Software in every county and public school district.
- Commonly referred to as TIMS (Transportation Information Management System), this statewide effort to utilize school bus routing software is supported by the North Carolina Department of Public Instruction (NCDPI) as a means of promoting student safety and cost efficiency across all 100 Counties and 115 School Districts.
- Ongoing Software Support and Training Services are provided by TIMS Project Leaders at North Carolina State University and UNC Charlotte.
- TIMS Project Leaders provide Edulog software training and support to local TIMS Coordinators, Bus Routers, Transportation Directors, Technology Staff and any others involved with managing the daily needs of school bus routing.

New Hanover County Schools: Background

TIMS Support Offices



UNCC: Urban Institute

NCSU: ITRE

New Hanover County

New Hanover County Schools: Demographics

County Population: 232,000 (2018 ACS)

Public School Enrollment: 26,749 (Feb 2020)

Total Schools: 49

AM Riders: 10,953 (41%)

PM Riders: 12,851 (48%)

Total Riders: 13,298 (49.7%)

Total Stops: 4,907

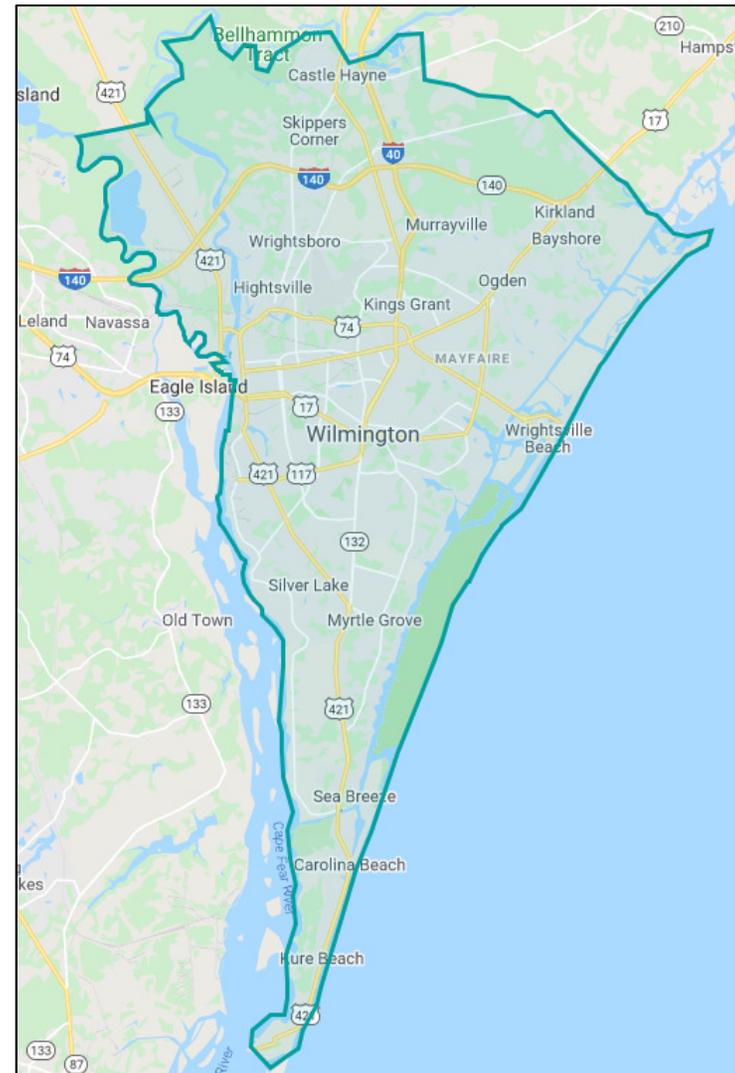
Total Runs: 606

Total Routes: 140

Runs per Route: 4.32

Daily Bus Miles: 12,200

Daily Driving Time: 600 Hours



New Hanover County Schools: Background

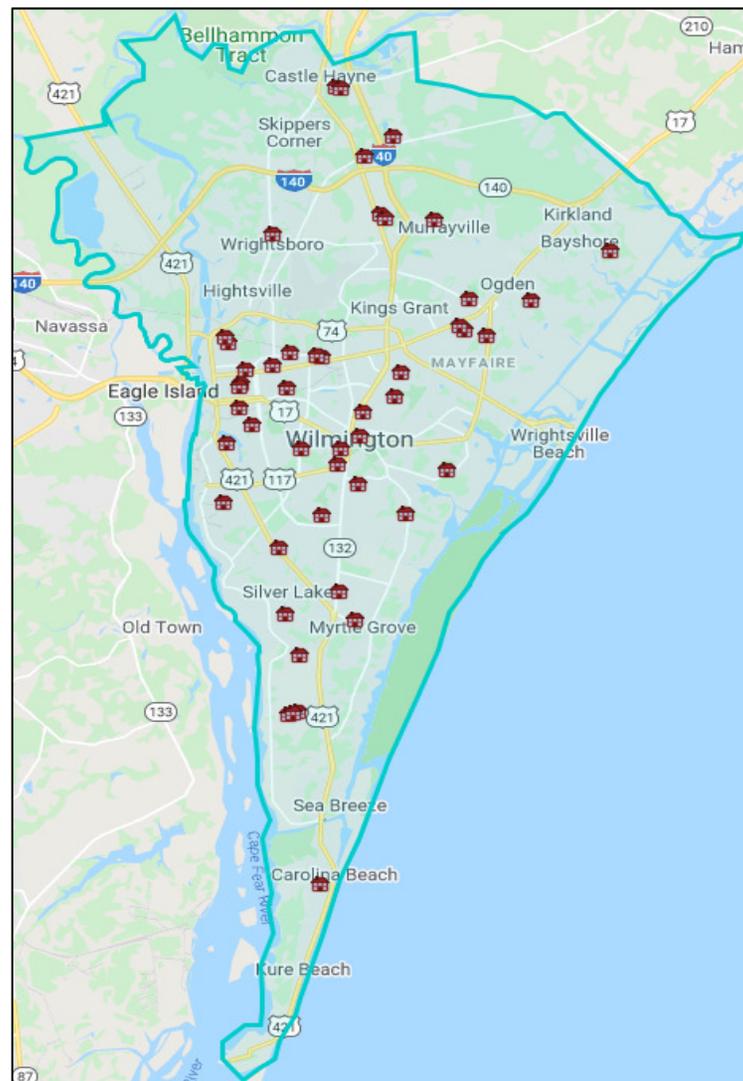
New Hanover County Facilities

- 27 Elementary Locations
- 10 High School Locations
- 9 Middle School Locations
- 5 Pre-K Program Locations

For Bus Route Planning, New Hanover County is divided into three divisions, each with a Bus Router and Division Supervisor.

- Northern
- Central
- Southern

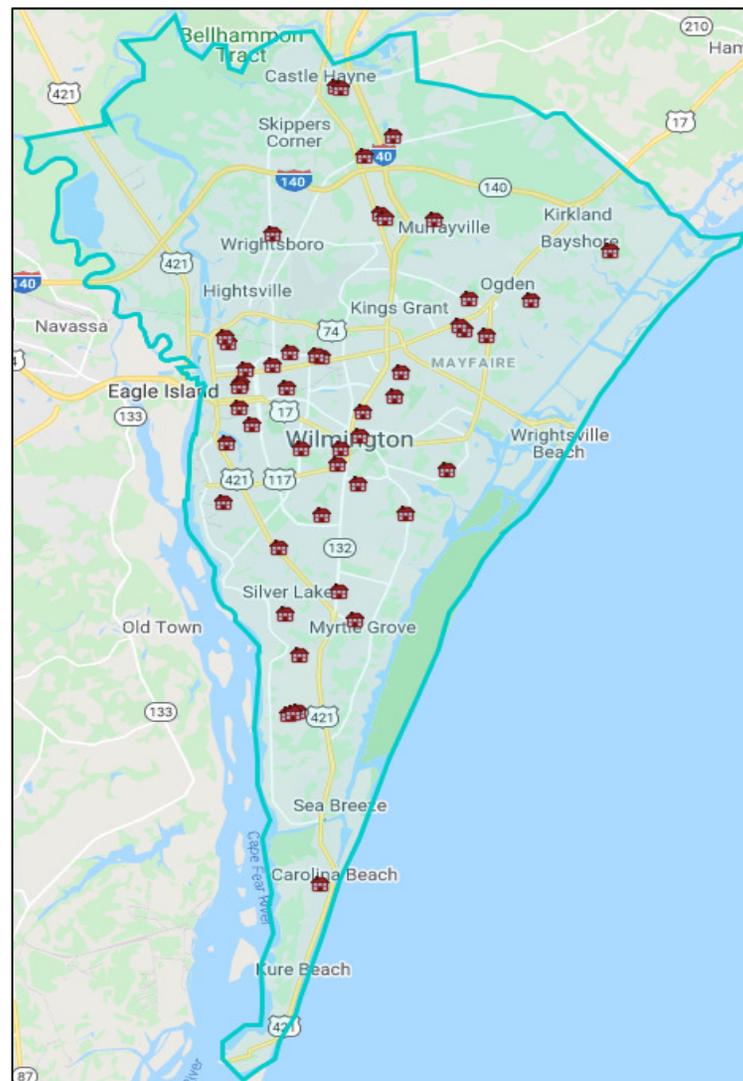
TIMS Staff within each division are responsible for managing the routes associated with buses assigned to schools within their division.



New Hanover County Schools: Background

New Hanover County Facilities

- Three High Schools, Two Elementary, and One Middle School service students from across all three divisions. These tend to be either Magnet Programs, Alternative Schools or a countywide Early College.
- Five High Schools, Three Elementary and Two Middle Schools service students from two divisions. These tend to be schools located on the border of the division boundaries.
- Twenty-two Elementary Schools, Five Middle Schools and Two High Schools within New Hanover County do not cross division lines.



NHCS: Previous Data Management Practices

Prior to March of 2019, New Hanover County Schools were collecting student ridership requests via a daily spreadsheet that was shared with each school data manager.

If a student submitted a new transportation request (after enrolling as a new student or following an address change), a school staff member would access an on-line form to populate a Google Drive worksheet with the information below:

- Staff Email w/ Date and Time Stamp
- Student Name
- Home Address
- Ridership Status
 - AM, PM or Both
- Assigned School
- Assigned Grade
- Alternative School Flag

NHCS: Previous Data Management Practices

After the TIMS Coordinator distributed the daily stop request spreadsheet each morning, TIMS Staff within the division offices would then complete the new stop requests for each student.

After assigning students and modifying any necessary stop, run or route information; TIMS Staff would then manually run a Bus Pass Slip for each new assignment completed that day. The Bus Pass Slips were then individually emailed, often one for each student, to their assigned school before the departure of PM Bus Routes.

All students in New Hanover County are required to show a new Bus Pass Slip the first time they ride the bus home from school.

With this methodology in place for several years, New Hanover County were mostly successful with keeping up to date bus routes and student assignments for the majority of regular education students.

However, there were some issues related to data management practices and irregular school assignments that were not being properly managed and maintained through current methods.

NHCS: School Irregularities

For the most part, students in New Hanover County Schools are almost always properly assigned to their school of attendance within PowerSchool and are imported correctly during UPSTU.

However, there are several short-term Alternative Schools within the system and students are not always properly reassigned to the alternative school code as these assignments may only last a few days or weeks before the student is readmitted to their proper school of attendance.

In addition to alternative school irregularities, many of the students with an IEP or Special Needs Requirements are not always properly assigned to the actual school building where they attend classes.

For both the temporary Alternative School assignments and the irregular Special Needs placements, the typical NewStu File used during UPSTU resulted in these students be reassigned to the default school code in PowerSchool, despite needing bus assignments to another facility.

NHCS: School Irregularities

Beyond these irregular alternative school assignments and special needs placements, there is another school within New Hanover County, DC Virgo Preparatory Academy, with a unique set of circumstances.

Although DC Virgo is located within New Hanover, this specialized high school is not part of the county public school system. Commonly referred to as a Lab School, this facility is independently managed by UNC-Wilmington and have their own student information system and, therefore, a stand-alone NewStu File.

Under the agreement with NCDPI, Public School Systems that contain a Lab School are required to provide transportation to\from this facility and are provided funding as if the facility was part of the public school system.

DC Virgo was previously a part of NHCS and previously had a valid three-digit school code of 409. However, upon becoming a Lab School, the school code was changed and shows a triple zero code (000) within the NewStu File as DC Virgo is the only Lab School in the county.

NHCS: School Irregularities & UPSTU

The standard UPSTU process involves the assignment of a student to a specific school code, which indicates their school of attendance and, therefore, the building they need transported to and from each day. For the irregular Special Needs, temporary Alternative School assignments and the DC Virgo students, the default school code from PowerSchool is not correct.

Historically, New Hanover County Staff would manage these assignments very informally by verbally communicating to schools and drivers about irregular assignments and that some stops would not have a student assigned even though a student does ride the bus.

On a small scale, this informal approach was successful in getting children to\from school each day. However, as the use of GPS Technology and Parent Tracking Applications have been adopted, New Hanover County must now properly manage all student assignments, including those with irregularities.

Staff Change & Improving Procedures



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NHCS: Sudden Staff Change & Improving Procedures

During February of 2019, in the midst of preparing to rollout GPS Technology and begin testing Parent Tracking Applications, the longtime TIMS Coordinator for New Hanover County suddenly passed away overnight one weekend.

Not only were colleagues and coworkers devastated by this unexpected death, but New Hanover County Schools were left in a tough predicament as TIMS Staff in each of the routing offices were not well versed in the more intermediate and advanced applications of the Edulog software.

Fortunately for New Hanover County Schools, there was a relatively new bus driver on staff who had recently retired from General Motors to the Wilmington area.

Knowing his background as an Engineer/MBA combined with his data management experience, Mr. Clawson applied for and received the job of TIMS Coordinator for New Hanover County Schools in late February, 2019.

He had never seen the Edulog Software prior to accepting the position.

NHCS: Assessment of Operations

Training new staff can be challenging for TIMS Project Leaders in North Carolina, but Mr. Clawson was a very quick study and immediately saw many areas for improvement as he began to understand the capabilities of the routing software, PowerSchool Data interactions and how current local procedures were operating on a daily basis.

New Hanover County, like many LEAs in North Carolina, had a series of manual processes and procedures in place for tracking and fulfilling new stops request and route changes.

Daily Student Request Spreadsheet

- Hand Entered by School Staff
- Manually Coded by TIMS Coordinator
- Distributed by Zone for Assignment

Bus Pass Slips for Students

- One per Student
- Emailed back to Schools
 - Mostly Individual
 - Sometimes in Groups

NHCS: PowerSchool – North Carolina SIS

PowerSchool has been around for nearly a decade in North Carolina. Unlike the previous SIS, PowerSchool offers a somewhat interactive Student Transportation Page.

Each student has their own transportation screen containing variables for AM/PM Transportation Status as well as a section for Special Transportation Requirements.

Requirements			
Restraint Required	Please Select ▾	AM Transportation Provided:	<input type="text"/>
Lift Required:	Please Select ▾	PM Transportation Provided:	<input type="text"/>
Monitor Required:	No ▾	Transportation Memo:	<input type="text"/>

AM Transportation Provided:	<input type="text"/>
PM Transportation Provided:	Yes
Transportation Memo:	No
	Alternate Transportation
	Car Rider
	Walker
	Van
	Bike Rider
	Daycare Transportation
	Special Needs - Standard Transportation
	Special Needs - Specialized Transportati
	Contract - Specialized Transportation
<input type="button" value="New From School"/> <input type="button" value="New To School"/>	

NHCS: PowerSchool – North Carolina SIS

At the bottom of each student transportation page is a section that contains assigned bus route information. Using TIMS Data from Edulog, NC school districts also have the capability to backload planned run and route data into PowerSchool, making it available to parents, teachers and school administrators.

From/To School	Bus Number	Route Number	Description	Start Date	End Date	Departure
To	88		HIDDENWOOD LN & NC 73 HWY	0/0/0	0/0/0	06:16 AM
From	46		HIDDENWOOD LN & NC 73 HWY	0/0/0	0/0/0	04:21 PM

From/To School	Bus Number	Route Number	Description	Start Date	End Date	Departure
To	111		SUGAR LN & BOYDEN RD	0/0/0	0/0/0	07:22 AM
From	111		SUGAR LN & BOYDEN RD	0/0/0	0/0/0	03:24 PM

Despite having these capabilities for years, many schools districts failed to explore the these options in an effort to improve daily operations and continued to rely on established methods already in place.

NHCS: Improving Operations – AM/PM Codes

The first step in improving operations was to eliminate the daily student spreadsheet and begin using the AM and PM Transportation fields from PowerSchool.

Spreadsheet data entry was being completed manually for each student by school staff, manually coded every morning by the TIMS Coordinator then distributed to each division.

After back loading TIMS Assignment Data to initially populate the fields for each student, school data managers now only have to select Yes or No for AM and PM instead of hand entering Last Name, First Name, Home Address, School, AM, and PM into the on-line form.

AM Transportation Provided:	
PM Transportation Provided:	Yes
Transportation Memo:	No
	Alternate Transportation
	Car Rider
	Walker
	Van
	Bike Rider
	Daycare Transportation
	Special Needs - Standard Transportation
	Special Needs - Specialized Transportati
	Contract - Specialized Transportation

New From School New To School

NHCS: Improving Operations – AM/PM Codes

During the UPSTU process, the AM and PM fields from PowerSchool are imported into the AM Trn D and PM Trn D fields of the student screen in Edulog.

The AM and PM Trn T Fields are free form user variables, not overwritten during UPSTU, and previously used by staff to hand code Yes and No each day based upon spreadsheet data.

User Defined Fields			
AM Trn D >:	<input type="text" value="Y"/>	AM Trn T >:	<input type="text"/>
PM Trn D >:	<input type="text" value="Y"/>	PM Trn T >:	<input type="text"/>

Within Edulog Reports, bus routers now have school worklists created to categorize all new requests by each division, eliminating the need for daily coding and distribution of new requests by the TIMS Coordinator.

After completing new daily assignments, instead of printing a bus slip for each student, bus routers within each division enter an A (for Added) into the AM Trn Field, indicating the new assignment has been completed. When word is received a student no longer rides the bus, routers enter a P (for Purge) into the PM Trn Field, indicating the new deassignment has been completed.

NHCS: Improving Operations – AM/PM Codes

By using the AM Trn T Code to denote a new assignment has been completed, New Hanover modified the Student Bus Passes Report in Edulog to be generated for all students with an A in this field.

Coupled with a Cover Sheet, showing the number of new bus pass slip per school; this new methodology no longer requires bus routers to create any bus passes for a student or distribute them back to each school. After completing all new requests each day, the TIMS Coordinator distributes the Student Bus Passes via a single email to all schools with a single attachment, as opposed to many emails coming from multiple routers to multiple schools.

Student Bus Pass Counts by School 01/03/2020	
School:309 - CASTLE HAYNE ES <i>Total Bus Passes: 10</i>	School:348 - MURRAYVILLE ES <i>Total Bus Passes: 2</i>
School:310 - MURRAY MS <i>Total Bus Passes: 8</i>	School:350 - NOBLE MS <i>Total Bus Passes: 2</i>
School:316 - COLLEGE PARK ES <i>Total Bus Passes: 7</i>	School:351 - MYRTLE GROVE MS <i>Total Bus Passes: 5</i>
School:324 - ALDERMAN ES <i>Total Bus Passes: 1</i>	School:352 - NEW HANOVER HS <i>Total Bus Passes: 2</i>
School:325 - TRASK MS <i>Total Bus Passes: 3</i>	School:354 - JC ROE CENTER <i>Total Bus Passes: 11</i>

NHCS: Improving Operations – Bus Pass Slip

Transportation Authorization

This form must be presented to the bus driver before student will be permitted to ride the school bus.

Last Name, First Name: [REDACTED]

Student Residence: [REDACTED]

School Name: SOUTHEAST AREA TECHNICAL HS

Grade: 09

Time at Stop	Stop Location	Bus Number
08:01 AM	LENNON DR & RINGO DR	390
08:33 AM	TRANSFER AT NHHS	419
04:35 PM	SEATECH SHUTTLE FOR NORTHERN BUS 332 AT WEC	412
05:18 PM	LENNON DR & RINGO DR	332

NOTE TO STUDENT: Please present this Bus Pass to the Bus Driver and Take Home to Parents.

NOTE TO PARENTS: A Bus Stop may be deleted if your child does not ride the bus for 3 consecutive days. Please notify your Bus Driver if unusual circumstances arise that will prevent your child from riding the bus for more than 3 days.

IMPORTANT: K to 2nd Grade riders must be met at the Bus stop by a parent unless an Unattended Bus Drop-Off Form has been signed and is on file at the school. Otherwise your K to 2nd Grade student will be returned to their school.

NHCS: Improving Operations – AM/PM Codes

By utilizing the available AM and PM Ridership Codes in PowerSchool, New Hanover eliminated the daily student spreadsheet for all new requests and constructed Edulog report filters to sort and distribute information by schools and routing divisions.

The screenshot displays two sections of the PowerSchool interface. On the left, under 'User Defined Fields', there are four input fields: 'AM Trn D >:' with the value 'Y', 'PM Trn D >:' with the value 'Y', 'AM Trn T >:' which is empty, and 'PM Trn T >:' which is empty. On the right, a dropdown menu is open, showing a list of transportation options: 'Yes', 'No', 'Alternate Transportation', 'Car Rider', 'Walker', 'Van', 'Bike Rider', 'Daycare Transportation', 'Special Needs - Standard Transportation', 'Special Needs - Specialized Transportati', and 'Contract - Specialized Transportation'. Below the dropdown are two buttons: 'New From School' and 'New To School'.

The AM Trn T field used by bus routers after completing a new assignment allows for the county wide bus slips to be sent easily each day. The PM Trn T field used by bus routers after completing a student deassignment allows the TIMS Coodinator to identify all of the new non-riders and create an Edulog extract used to update the Yes to No in PowerSchool prior to UPSTU the next morning.

After sending Daily Bus Passes and updating Powerschool Yes's to No's, the TIMS Coordinator then uses the Edulog Utility Batch User Fill to purge the AM and PM Trn T data for that day, resetting this information for use the next day.

Managing Irregular Student Assignments



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NHCS: Managing School Code Irregularities

In PowerSchool, the school code is correct and matches the building that a student attends for the nearly all records in the NewStu file.

Common School Code Discrepancies

Irregular Special Needs Placements

- Under some circumstances, students with special education requirements may receive daily instruction at another school location, although in PowerSchool they are officially assigned to what would be their home school if not for the IEP Assignment.
 - Example: Student is assigned to School 328 but all courses are located at School 342, which houses the autistic center.

Alternative School Temporary Assignments

- Most counties provide Alternative School locations for children with severe behavioral problems, criminal backgrounds and other issues related to safety and social integration.
- Students with long-term placements will be assigned to the school, while some students may receive temporary placement following a fight or other disciplinary infraction at the home school.
 - Example: Student is assigned to School 342 but all courses are at the alternative school (370) for the next 5 days.

NHCS: Managing School Code Irregularities

DC Virgo Preparatory Academy: NC Lab School

Prior to becoming a Lab School and administration taken over by UNC-Wilmington, DC Virgo was an New Hanover County School Early College location where students attended courses. Because this school was part of New Hanover County Schools a few years back, TIMS staff were still using the previous code of School 409 for managing transportation for these students.

Following the switch to becoming a UNCW Lab School, students at this location are now contained in a separate NewStu File and assigned to a school code of 000.

Prior to the current school year, students from DC Virgo and those with irregular special needs and alternative school assignments were informally managed within TIMS, often losing assignments during UPSTU and not being fully tracked throughout various trips to and from school within the routing system.

With the recent district wide release of the Parent Portal Bus Tracking App, it was imperative all students be assigned correctly and hold their assignments within Edulog.



NHCS: Managing School Code Irregularities

ITRE: Summer School Code Replacement Database

Summer School locations vary from year to year and students from multiple schools are often assigned to the same summer program instead of each school holding classes for a small number of students. This always posed a problem within the routing system as PowerSchool was not capable of creating a NewStu File showing the summer school building of assignment. Many school systems would either manually change the school code of the student or would create empty stops with the student name added to the stop description.

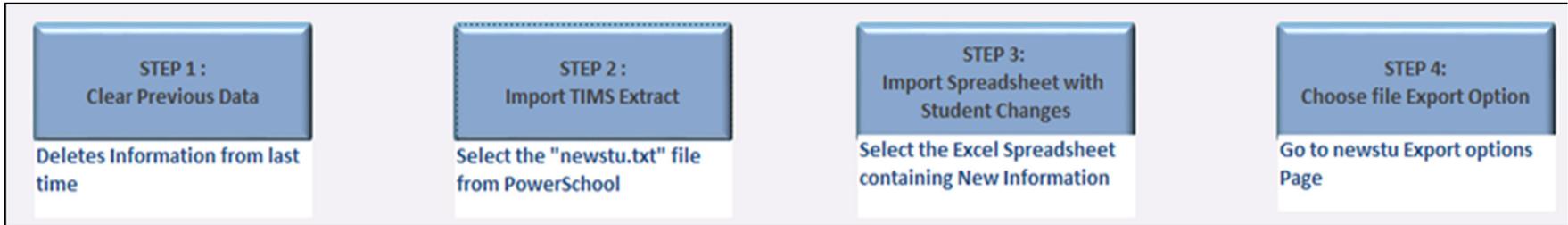
After helping LEAs navigate this issue for several years, ITRE Staff at NCSU developed an Access Database that would allow TIMS Staff to alter the school code within the NewStu File for a select group of students. Using an Excel Spreadsheet containing the PowerSchool ID, desired school code of any student needing a change, and Y/N ridership data, the School Replacement Database updates the NewStu file and exports a replicated version containing only students with changes or all students, including those with changes.

This tool was developed and released by NCSU-ITRE in Spring of 2018.

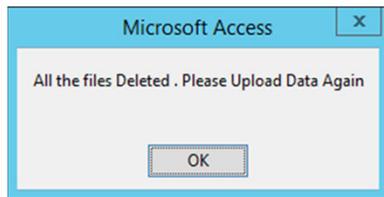


NHCS: Managing School Code Irregularities

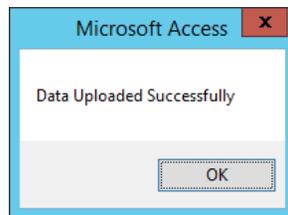
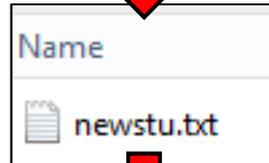
ITRE: Summer School Code Replacement Database



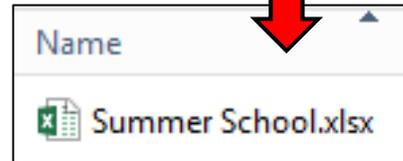
Click the Step 1 Button to Clear Previous Data



Click the Step 2 Button. Then browse to and select the most recent TIMS Extract

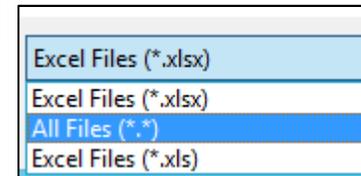


Click the Step 3 Button. Then browse to and select the Excel Spreadsheet



After Importing the NewStu.txt and Excel Spreadsheet;

Click the Step 4 Button to visit the Export Options Page



You may need to view All Files to see Different versions of Excel Spreadsheets.

NHCS: Managing School Code Irregularities

Daily Use of School Code Replacement Database

Using this **same process**, the TIMS Coordinator modifies all codes in the stand alone NewStu from the NC Lab School: DC Virgo, replacing School 000 with 409. This updated file is then merged with the primary NewStu file from New Hanover County.

Similar to the original student request spreadsheet, staff from the alternative school maintain a similar file used to manage temporary assignments. At any given time, there can be over 50 students with a temporary placement at the alternative school; each with their own begin and end dates of assignment and transportation requirements.

The alternative school spreadsheet is structured so the TIMS Coordinator can see which students will remain in temporary assignment, which incoming students will need a new alternative school bus stop assignment as well as which students are transitioning back to their home school and need assigned to their previous bus stop.

This spreadsheet is used each day to modify the alternative school assignments and transportation requirements in the NewStu file.

NHCS: Managing School Code Irregularities

Daily Use of School Code Replacement Database

Many of the Special Needs students with irregular school assignments attend courses at three specialized facilities throughout the county,:

CDC: Child Development Center

TPY: Transitional Program from Young Adults

UCP: United Cerebral Palsy Center

In TIMS, students are manually reassigned to one of these codes following the IEP Meeting. Prior to UPSTU, the TIMS Coordinator creates an extract of all students in these schools and process this file through the school replacement database in order to preserve the irregular school of assignment within the routing software.

NHCS: Summary of Daily Data Management

Summary of Daily Data Management

- 1) Run Extracts from TIMS (6:15am)
 - a) AM Trn T – Students with Bus Passes from yesterday
 - b) PM Trn T – Deassigned Riders from yesterday
 - c) CDC, TYP and UCP Student Spreadsheet
- 2) Reset AM and PM Trn T from TIMS using blank Batch User Fill in EMU
- 3) Update PowerSchool Yes to No from PM Trn T file using PS Data Import Manager
- 4) Download primary NewStu file from New Hanover PowerSchool
- 5) Modify DC Virgo NewStu file and merge with primary
- 6) Modify merged NewStu file with updated school codes
 - a) CDC, TYP and UCP student spreadsheet
 - b) Alternative School student spreadsheet
- 7) Use NewStu file containing all edits to complete UPSTU (8:30am)
- 8) After Daily Assignments completed by Bus Routers (12:30pm)
 - a) Create countywide student bus pass file
 - b) Create bus pass coversheet
 - c) Send a single email with a single attachment to all School Staff for PM Distribution to Students

Questions or Comments?

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