

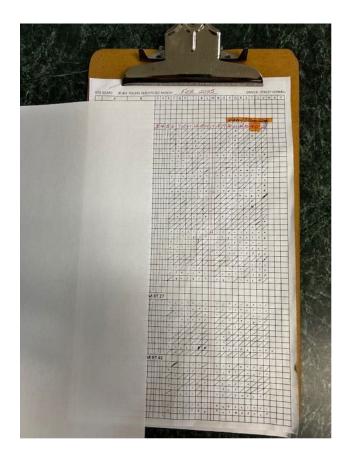
**Board of Education** 

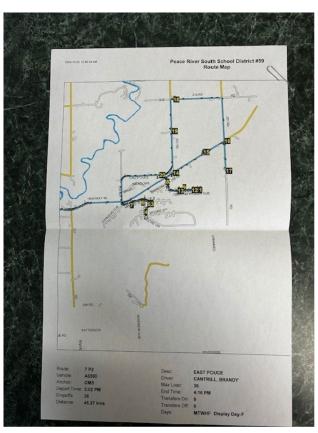
April 30, 2025

J Lekstrom M Kemp K Morris

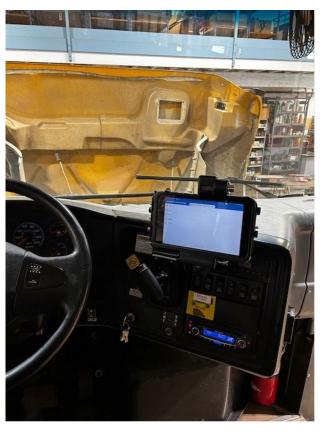
# **The Project**

Migrate current transportation routing and planning software to new software









# **Project Description**

Transportation
Routing and
Planning GPS
System

Migrating from softwares Synovia and Versatrans to Traversa

Versatrans at end of life; no choice but to find a new solution

Versatrans and Traversa are both Tyler Technologies

Final business case April 15, 2024 Board advised in ST's September 2024 Monthly Report

Vetted by
Technology
Systems Manager

Budget and Implementation 24-25

Phased approach:
Dawson Creek (full)
then Chetwynd
(routing/mapping)

# **Opportunity 1: Al Powered Route Optimization**

#### **TRAVERSA**

optimize routes, reduce fuel consumption, and improve on-time performance

- Transportation staff build routes manually based on each year's ridership and put them on 11x17 maps to place on each bus.
- Each route typically includes at least two runs, and some have three runs (AM, PM1, and PM2). This means that we will need to print two or three sets of maps for each route whenever there is a change
- Previously, the Student Manifest was only visible once a month. Now, with the current Traversa system, it is live on our PCs.
- Printed rider manifest to drivers all student information on them and we do not have control where these manifest end up.
- Maps difficult to read in poor visibility (dark mornings) leading to stress and delay
- Challenge to find stop locations
- Challenge to adjust routes

## **Tyler Tech**

#### Stop Activity Report

#### Runs for 3/13/2019

Driver Name Carl, Darryl Run Name DFC PM 1

Vehicle \*

Stop Description	Planned	Actual	Result		Total on Bus	Loaded	Unloaded	Mileage
Pick up ten Students	4:30 PM	4:29 PM	Serviced		10	10	0	0.000572 5765
Drop Off Batman and Robin	4:31 PM	4:30 PM	Serviced	ı	8	0	2	0.379168 4
Drop off Flash	4:32 PM	4:32 PM	Serviced	ı	7	0	1	0.982134 3
Drop off Green Lantern	4:35 PM	4:33 PM	Serviced	ı	6	0	1	1.513560 65
Drop off Aquaman	4:40 PM	4:3º PM	Serviced	r	5	0	1	3.242118
K ktl #PG g V (Cas sus	M-Sign	1:4: PM	Ve	L	чер	ort	S	7.427174 57
Drop off Superman and Wonderwomen	4:52 PM	4:45 PM	Serviced	ı	1	0	2	8.970323
Drop off Hawkman	5:03 PM	4:50 PM	Serviced		0			0

# **Opportunity 2: Manual Process Automation**

#### **TRAVERSA**



automates previously manual processes, while providing flexibility to incorporate expertise from drivers.



continuously monitors the status of vehicles in real-time, **automating the process of tracking and managing** fleet operations.



alerts fleet managers to any exceptions or deviations from the planned routes or schedules, such as delays, missed stops, or vehicle breakdowns.

- Event driven: when a bus driver radios in to say there is an accident, stuck or a mechanical issue.
- Driver suggestions difficult to incorporate due to manual map processes

# Opportunity 3: Dynamic Dispatching and Assignment

#### **TRAVERSA**



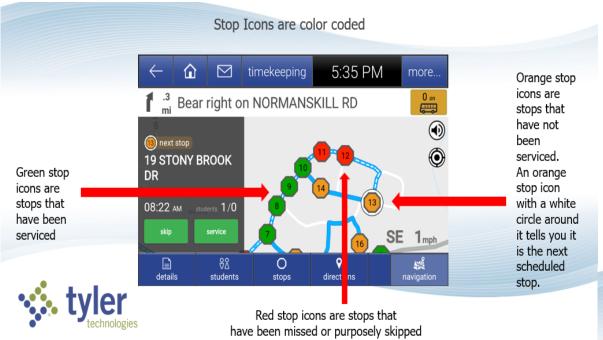
**automates the dispatching and assignment** of tasks to drivers, eliminating the need for manual coordination by dispatchers.

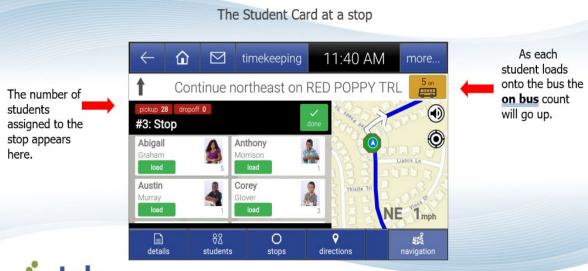


assigns stops or pickups to available drivers if regular route is interrupted by unforeseen events

- When there is a breakdown, driver radios in and Transportation staff manually phone a replacement and provide a map. The other driver or the sub has to find the bus and transfer the students to the replacement bus.
- If the replacement driver or sub is unfamiliar with the route, lack of confidence and increased probability of error

## **Traversa Tablet - Enroute**





# **Opportunity 4: My Ride (RFID Cards)**

#### **TRAVERSA**



Enhanced safety features can ensure student security and provide peace of mind to parents and school administrators



Automated Attendance Tracking automates the process of tracking students as they board and disembark from school buses.



Each student is provided with a unique RFID card that they tap upon boarding and exiting the bus.



The system automatically records this information in real-time, providing accurate attendance data to school administrators.

- Attendance on buses is manual using a manually produced manifest each month based on ridership.
- Courtesy riders' parents phone in to transportation to advise when a student is altering their usual route to school and home.
- Driver pulls over and manually checks a clipboard to see if a student is on the bus.
- Significant room for error with manual student lists
- Manual updates to parents/schools.

# Opportunity 5: Secure Boarding and Disembarking

#### **TRAVERSA**

- secure access control for students boarding and disembarking from school buses.
- Only students with valid RFID cards or have a profile in MyEd can access the bus
- Courtesy, occasional riders or students who have lost their RFID cards can be manually loaded by the driver by tapping the tablet

- Transportation clerical staff produce monthly manifests and attendance sheets each month for placement on each bus.
- Drivers, especially casuals, memorizing student names
- If ridership changes mid-month, clerical staff notify the driver
- Driver manually checks off student names as they load
- No process for unloading students
- Driver manually crosses off names or adds name to bottom of clipboard manifest

# **Student Card/RFID Card**

#### **SD59 STUDENT CARD (WITH PERMISSION)**

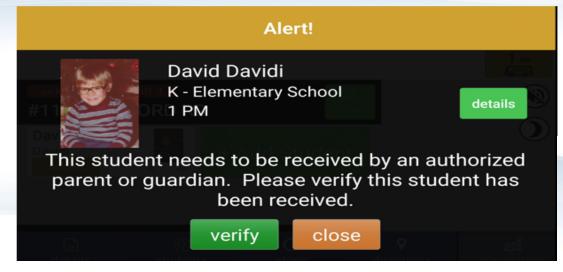


#### **TRAVERSA (WITH PERMISSION)**

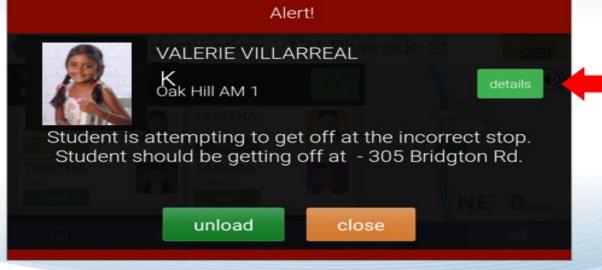


## **Traversa Tablet - Enroute**

Some students may need to be met by a parent. If a field is flagged as such an Alert will come up for the driver



Student scanning off at the incorrect stop



# **Traversa – Live Reports**

# **Stop Activity Report**

#### Tyler Tech

Stop Activity Report

#### Runs for 3/13/2019

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Vehicle 1							
Stop Description	Planned	Actual	Result	Total on Bus	Loaded	Unloaded	Mileage
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Drop off Flash	4:32 PM	4:32 PM	Serviced	7	0	1	0.982134 3
Drop off Green Lantern	4:35 PM	4:33 PM	Serviced	6	0	1	1.513560 65
Drop off Aquaman	4:40 PM	4:36 PM	Serviced	5	0	1	3.242118
Kick the Bad guys off the bus	4:46 PM	4:42 PM	Serviced	3	0	2	7.427174 57
Drop off Superman and Wonderwomen	4:52 PM	4:45 PM	Serviced	1	0	2	8.970323
Drop off Hawkman	5:03 PM	4:50 PM	Serviced	0	0		0

#### Tyler Tech

Student Activity Report

Student Activity Report

Student	Student ID	RFID	Scan Time		Location	Vehicle	Run
Badguy, Joker	000109	[]	3/1/2019 7:42:25 AM	П	42.75828, -73.81469	Darryls Hotrod	DFC am 1
Badguy, Joker	000109	[]	3/1/2019 7:44:18 AM		42.75707, -73.82207	Darryls Hotrod	DFC am 1
Badguy, Penguin	000110	[]	3/1/2019 7:42:20 AM		42.75827, -73.81469	Darryls Hotrod	DFC am 1
Badguy, Penguin	000110	[]	3/1/2019 7:44:16 AM		42.75707, -73.82207	Darryls Hotrod	DFC am 1
Goodguy, Aquaman	000105	[]	3/1/2019 7:36:44 AM		42.74268, -73.83963	Darryls Hotrod	DFC am 1
Goodguy, Aquaman	000105	[]	3/1/2019 7:44:08 AM		42.75708, -73.82208	Darryls Hotrod	DFC am 1
Goodguy, Batman	000102	[]	3/1/2019 7:22:58 AM		42.67032, -73.91301	Darryls Hotrod	DFC am 1
Goodguy, Batman	000102	[]	3/1/2019 7:44:06 AM		42.75709, -73.82208	Darryls Hotrod	DFC am 1
Goodguy, Flash	000106	[]	3/1/2019 7:30:38 AM		42.71220, -73.87180	Darryls Hotrod	DFC am 1
Goodguy, Flash	000106	[]	3/1/2019 7:44:10 AM		42.75708, -73.82208	Darryls Hotrod	DFC am 1
Goodguy, Hawkman	000108	[]	3/1/2019 7:39:37 AM		42.74543, -73.81688	Darryls Hotrod	DFC am 1
Goodguy, Hawkman	000108	[]	3/1/2019 7:44:13 AM		42.75707, -73.82208	Darryls Hotrod	DFC am 1
Goodguy, Robin	000103	[]	3/1/2019 7:22:56 AM		42.67030, -73.91299	Darryls Hotrod	DFC am 1
Goodguy, Robin	000103	[]	3/1/2019 7:44:24 AM		42.75706, -73.82207	Darryls Hotrod	DFC am 1
Goodguy, Wonderwomen	000104	[]	3/1/2019 7:27:16 AM		42.69724, -73.88827	Darryls Hotrod	DFC am 1
Goodguy, Wonderwomen	000104	[]	3/1/2019 7:44:21 AM		42.75707, -73.82207	Darryls House	DFC am 1

Total Scans: 16

otal Students Scanned: 8

# **Opportunity 6: Real Time Tracking**

#### **TRAVERSA**

**Improves communication** with stakeholders and enables better decision-making.

Enhanced Visibility for Parents/Guardians provides visibility into the location and status of school buses transporting their individual children.

Parent portal or mobile app, stakeholders can track the real-time location of buses, estimated arrival times, and any delays or deviations from the planned route.

Improves communication between schools and parents, enabling them to make informed decisions about pick-up and drop-off times.

Transportation Office can send messages to the Drivers through the software/tablet instead of radio.

- Manual phone calls if early or late
- Wait / idling time inefficiencies
- Increased radio traffic

# **Opportunity 7: Alerts and Notifications**

#### **TRAVERSA**

- Allows parents and Transportation Department staff to set up customizable alerts and notifications related to student transportation using My Ride RFID Cards.
- 2. This will be phased in at a later date, but capability is available once RFID cards are implemented

#### **PREVIOUS**



Delays can occur in the afternoon when parent not at the stop; the bus must wait for the parent if student is grade K-4.



This causes wait and idling time at the stop until the scheduled drop off time.

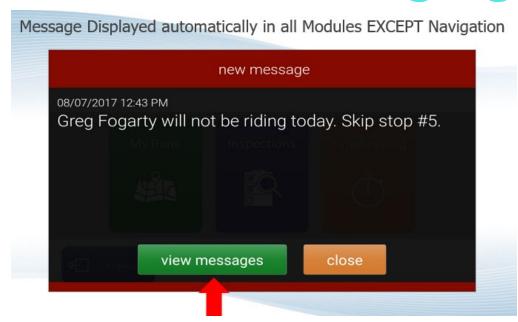


Manual phone call if early.

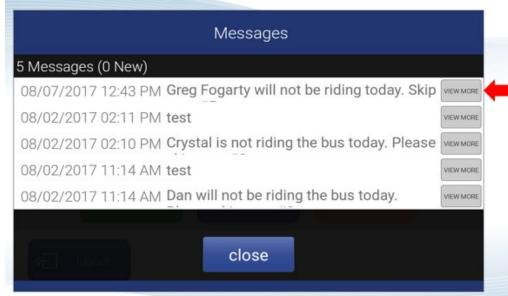


Eliminates parent phone calls to transportation office to check on drop off times.

# **Messaging to Drivers**







# **Opportunity 8: Optimal Resource Allocation for Fleet Managers**

#### **TRAVERSA**

- tracking enables fleet managers to monitor the location and status of school buses in their fleet in real-time.
- data-driven decisions to optimize resource allocation and improve operational efficiency.
- Managers can identify underutilized vehicles or routes with excessive idle time and reassign resources to areas of higher demand.
- minimizing costs and enhancing service quality.

- Transportation staff manually pull GPS data for each day off of one app and then coordinate with another app if there is an issue (public inquiries or parental concerns).
- Any shortening of routes or efficiency finding is done manually and as time permits for the manual work.

# **Opportunity 9: Paperless, Centralized Data**

#### **TRAVERSA**

- Registration process involves:
  - parents phoning in and Transportation staff manually filling out the form on the phone with the parent.
  - then gets passed on Transportation staff for placement on a route through checking a box in MyEd.
  - Once Traversa places the student on the appropriate route,
     Transportation staff makes a written note on the form to indicate it has been processed.
  - Transportation staff then call the parent to let them know the outcome of the registration process.
  - Student now appears on the tablet for in a route and for a stop for the driver's use.
  - Future: potential to streamline by allowing the parent to register on-line through the school and MyEd to automatically place on a route.

- Registration process involves:
  - parents phoning in and Transportation staff manually filling out the form on the phone with the parent.
  - then gets passed on Transportation staff for placement on a route and entry into Versatrans.
  - Once placed on a route, Transportation staff makes a written note on the form to indicate it has been processed.
  - Transportation staff then call the parent to let them know the outcome of the registration process.
  - Transportation clerical staff make 2-3 copies for each bus route and bus the student will ride.

# **Opportunity 10: Field Trips or Non-Routine Runs**

#### **TRAVERSA**

- Streamline administrative tasks and improve overall efficiency.
- Automated Trip Planning and Approval: Teachers or administrators can initiate trip requests directly within the school system, specifying details such as destination, date, time, and number of students attending.
- Teachers can add students to the manifest (filtering from MyEd) when creating a Field Trip on Traversa. The manifest will be available to both the driver on their tablet and the Transportation office.
- Automatically generates optimized routes and schedules for the field trip buses
- Transportation staff assign driver
- Streamlined planning process and elimination of manual coordination reduces administrative burden
- Ensures field trips are efficiently organized and approved.

- PVP or school secretary initiates fillable form which is then sent to Transportation.
- Transportation staff assigns driver.
- The form is printed to go on the bus taking the trip, the driver logs the time and mileage and if they have a meal.
- The form is then gathered by Transportation clerical staff who enter the data and then route it to Finance for the journal entry chargeback in Atrieve.

# Opportunity 11: Field Trip Centralized Communication and Notifications

#### **TRAVERSA**

- enables centralized communication and notifications regarding field trips.
- Once a trip is approved, automatic notifications to relevant stakeholders including teachers, and transportation staff, with details such as departure times, pick-up locations, and emergency contact information.
- Real-time updates and alerts can be communicated via email, SMS, or in-app notifications to keep all parties informed of any changes or updates to the trip itinerary.
- Enhances coordination, minimizes confusion, and ensures that everyone involved in the field trip is well-informed.

- School creates and maintains its manifest.
- Transportation Department does not have a copy of the manifest.
- School staff notify parents manually for nonroutine events during the trip and arrival times or delays.

## **Opportunity 12: Pre and Post Trip Inspection**

NOTE: Pre and post trip inspections are legal requirements for CVSE (Commercial Vehicle Safety Enforcement), and the Transportation staff must keep copies for a period of time subject to CVSE inspections

#### **TRAVERSA**

- Completed on the tablet that is supplied and installed on each bus.
- Recorded for compliance
- Recorded for any mechanical issues that are identified by the driver that need to be completed are forwarded by the program directly to the mechanical area for review and action.
- Removes the responsibility of management staff doing the manual review and filing.
- CVSE accepts the digital pre and post trip on tablets as compliance evidence.

- Functions completed by drivers manually on a paper booklet and may leave room for error or missed safety check points in the process.
- Mechanics review post trips for mechanical issues manually
- Clerical staff file manually for CSVE inspection

# **Opportunity 13: Engine Data**

#### **TRAVERSA**

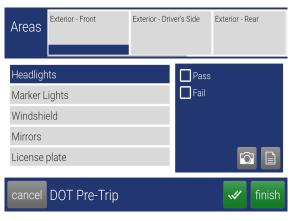
 Alerts mechanics to work the moment it is needed.

- Preventative maintenance schedule or Driver radios in to say for example "engine light on" or a "I've broken down."
- A third software, Asset Planner, is then used for the transportation work order system.

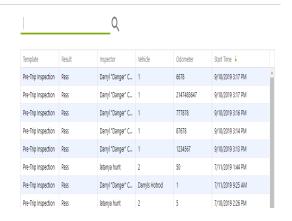
# **Pre & Post Trip**

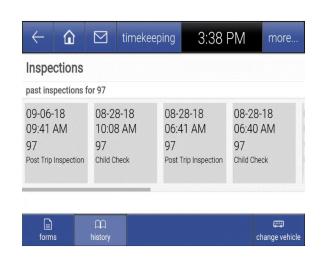
### Traversa





Submitted Inspections

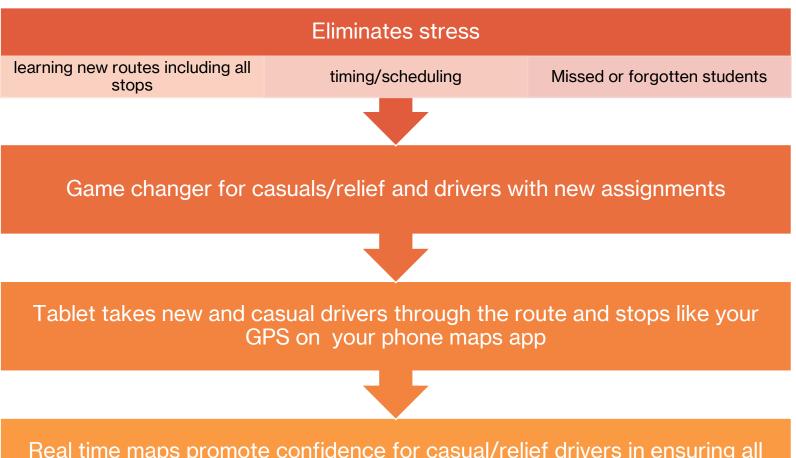




### **Previous**

IP INSPECTION
TIME (6:00) SPEEDO (164628)
FRONT END
HEADLAMPS, HIGH AND LOW BEAM
LICENSE PLATE
MARKER LIGHTS
ALTERNATING FLASHERS
R.F. TURN SIGNAL
HOOD LATCHES
R. CONVEX MIRROR SAFETY CROSS
INTERIOR / EXTERIOR
TIRE CHAINS, TOW CHAIN
FIRE EXTINGUISHERS, FIRE AXE
REFLECTORS, H.A.W.D.
_ FIRST AID KIT, TOOL KIT
STEP AND AISLE LIGHTS
SEAT FRAMES AND CUSHIONS
SIDE WINDOW LATCHES AND BUZZERS
REAR DOOR LATCH AND BUZZER
L.R. TURN SIGNAL D_
L.F. TURN SIGNAL
DRIVER AREA
2-WAY RADIO ON (CH. 1)
FUEL GAUGE
VACUUM PRESSURE
OIL PRESSURE
WATER TEMPERATURE
AMMETER, VOLTMETER
HORN
WINDSHIELD WIPERS AND WASHERS
WINDSHIELD GLASS
DEFROSTER AND HEATER FANS
LIGHT MONITOR SYSTEM
MIRROR ADJUSTMENTS
INTERIOR MIRROR 6 X 30
PARKING BRAKE TEST
PAHKING BHAKE TEST
PRE TRIP OK
FUEL VOIL V
lat. (Stuck )
HIP SHIFT
COMMENTS

# Recruitment and Retention



Real time maps promote confidence for casual/relief drivers in ensuring all students are onboarded and unloaded in correct locations



Regulation 6070.5 7b.

"Busses running behind schedule in excess of 20 minutes shall be announced over the local radio and on the website"

# Policy & Regulations to Consider



Regulation 6070.5

"All regular scheduled school buses shall be equipped with two-way radio, capable of maintaining contact with the Bus Garage throughout the school bus route."



Regulation 6070.9

"Current passenger lists shall be maintained and a copy carried on the bus." Versatrans end of life (14 years old)

Synovia (GPS System) does not integrate with Versatrans

Outdated mapping

# Previous State – Versatrans and Synovia

SD59 is one of two remaining districts still utilizing Versatrans

Manual route building

Manual maps, manifests and pre and post trip

Long training timeframes for casual drivers

Increased probability of error with new or casual drivers

Manual intervention to re-route or make changes on the fly

## High volume of radio communications

 offloading younger students, radio to office, office looks up parent phone number, phone and parent goes to the stop Radio communications are open to all drivers (privacy and confidentiality)

# Current State/Ideal State Traversa

One software

Maps are in real time

Optimize route building using technology, with manual adjustment as needed

Automates exception handling – delays, missed stops, mechanical issues

Automates work orders resulting from pre and post trip

Preventative maintenance odometer relays to mechanics for work orders

Dispatching and assignment is automated when breakdown, driver receives map and reroutes electronically

Automated manifest generation and updating keeping ridership current; courtesy riders can be added (MyEd)

Student information is real time in MyEd

My Ride – RFID Cards – automates attendance (replaced manual manifest) Provides student security ensuring no student left at bus stop or on the bus, child lost or left unattended

Ease of driver route suggestions applied to maps

Transportation office can update messaging on tablets, without driver needing to come into office for updates

# **Implementation Timeline**

Event	Description	Check when Completed	Completion Date - Business Case	Revised Target Date - Tyler Tech Meeting May 31	Revised Target Date - Nov.19th, 2024	Revised Larget	Notes
Implementation	Phase 2	<b>√</b>	Jan-25	Jan-25	Jan-25	Jan 31st, 2025	Phase 1 Debrief with drivers, transportation mgmt. staff and clerical with initial champions & transportation mgmt & clerical
Implementation	Phase 3	$\sqrt{}$	Jan-25	Jan-25	Jan-25	April 7- 9, 2025	Driver training
Implementation	Phase 4	√	Jan-25	Jan-25	Feb-24	April , 2025	Remainder Routes/Drivers
Board Report	Transportation Mgmt	& ST	May-25	May-25	May-25	Apr-25	Update and support decision to migrate & budget investment
Training	Phase 3		Feb-25	Mar-25	Mar-25	May-25	Admin – Principals, clerical, finance staff
Implementation	Phase 5		Apr-25	May-25	May-25	Sep-25	RFID cards for students
Full Implementation			Apr-25	May-25	May-25	Oct-25	
Synovia and Versatra	ns Terminated		Apr-25	Jun-25	Jun-25	Nov-25	

# Replacement Considerations

Feature	Traversa (Tyler	BusPlanner	Transfinder	Sonovia (CalAmp)	
reature	Technologies)	Busrtainiei	Halisillidei		
Routing & Scheduling Software	X	X	X		
Fleet Management Software	X	X	X	Χ	
Student Tracking Systems	X	Х	X		
Parent Communication Tools	X	X	X		
Data Analytics and Reporting	X	Х	Χ	Χ	
Consulting and Training Services	X	Х	Χ	Χ	
Integration Services	Х	Х	Х	Χ	
Mobile Applications	Х	Х	Х	Χ	
Customer Support	Х	Х	Х	Χ	
Field Trip Management	Х	Х	Х		
Route Optimization	Х	Х	Х		
Stop Management	Х	Х	Х		
Driver Management	Х	Х	Х	Χ	
Telematics Solutions	Х	Х	Х	Х	
Asset Tracking	Х			Х	
Cloud-Based Solutions	Х	Х	Х	Х	
Remote Monitoring and Control				Х	
IoT Devices and Sensors				Х	
		Through	Through		
GPS Tracking and Vehicle Management	X	different	different	Х	
		Vendor	Vendor		

## Cost

#### **Previous State**

- Versatrans \$10,204
- Synovia \$22,403 (Note: Synovia notice of 25-26 rate increase/equipment update)
- Total \$32,607 annually

#### **Current State**

• Traversa \$46,525 annually

RFID cards \$1,000 (1,000 cards)

One Time (2024-2025 Budget Year)

- Traversa \$132,004 1x implementation cost
- Training \$6,000

# **Project Status**

Tablets are installed

RFID card readers are installed

Drivers have been trained

Maps are updated and routes are built

Student data is updated based on MyEd

All routes are using the system

# **RFID Cards**



Will be provided to students in September



Replaces the manual checking on paper on a clipboard with automated checking electronically through card reader



Does not track whereabouts of student other than on the bus: yes on the bus or no not on the bus



Wording on the card: student name



Card cost (after initial 1,000 cards): \$2-3 each



Diversabilities – driver or EA will hold the cards, not the students, unless the student wants to scan the card

## **RFID Card Cost**

- 2025-2026 is first year of RFID card implementation
  - Cards and carabiner supplied by district at no cost
  - Lost cards will be replaced by district at no cost
  - Cost of cards, including replacement for lost cards, will be monitored for budget evaluation and recommendation
- 2026-2027 and subsequent
  - Dependent on 2025-2026 pilot

# RFID Other Uses

RFID cards can be multi-purpose

Only purpose of Traversa RFID card for bussed students loading and unloading from the bus

Future additional uses are at the discretion of the Board and individual department staff recommendation outside of the Transportation Department

#### **Communication**

#### **PVP**

- To date
  - Importance of accurate MyEd data
  - Traversa is being implemented; look for parent/staff/community communication soon
- To do:
  - Parent information for inclusion in newsletters, posting to websites and PAC meetings
  - Field trip training

#### **Parents**

- To do:
  - Project implementation May
  - RFID information June
  - Website

# **Myth Busting**

RFID cards track students' whereabouts in the community

Students will be "chipped" or "tagged"

Wasting taxpayer money

The new system will make reductions in the workforce/cuts

My child will be left on the road if they don't have a card

The RFID card information is readable to anyone who finds it

## **Feedback from Other Districts**

#### **Positive**

- One stop shop software app rather than multiple tools to do the job
- User friendly interface
- Adjustments to routes are simple to make
- Train the trainer without needing Tyler Technologies for all training
- Casual drivers or mechanics filling in like Traversa because takes unfamiliarity out of routes; can successfully complete routes without having driven them before
- Worth it to have all component working together in one platform

#### Negative

• Set up and accuracy of maps can be impediment if not configured correctly

## **Feedback from Drivers**

#### Positive

- More likely to take a what appeared to be a complicated route because the stops are clear and available
- Change is more accepted as drivers start to see the value of the features
- RFID cards will make boarding and unloading more efficient and accurate
- Communication on tablet rather than radio (visual mail logo vs radioing in) or in person
- Anticipate ease of use in winter months

#### **Negative**

- Change
- Technology
- Concern about reduction in the workforce through efficiency

## **Conclusion**







**EFFICIENCY** 



SAFETY



COMMUNICATION



**VALUE ADD** 



SOLUTION FOR END OF LIFE LEGACY SOFTWARE

# **Questions**