Routefinder PLUS Provides A Customizable Approach to Special Needs Routing

Alpine Independent School District, Utah

There are some quotes behind **Derek Farnes'** desk, one quote that is in bright red, which is attributed to his wife. It reads: "I thought the bus was like Santa Claus. It just knew where I was."

Farnes said his wife made the statement not long after he started his position at the **Alpine Independent School District**, located in **American Fork**, **Utah**, a dozen years ago.

"I'd go home and tell my wife about the day, just as husbands and wives would," Farnes said. "She made a comment one time as I would explain all the things that go on behind the scenes with bus routing."

Farnes, the maps and *GIS/routing supervisor* at the school, said there certainly is more than meets the eye when it comes to school bus transportation. Whether it's routing for special education or regular education, much of the work done for a smooth transportation operation is invisible to the community.

"As you talk about all the intricacies of curb approach and trying to meet certain time windows and obviously equipment needs, etc. It's absolutely – no matter what system you're using – more complicated than it seems."

Farnes said during the last dozen years he has seen a significant shift in the technology, improvements in GIS technology. GIS stands for geographic information system. GIS is the framework used for capturing and analyzing geographic and special data.Technology is critical these days, Farnes said. Alpine ISD has about 81,000 students attending 92 schools (60 elementary schools and two more opening in 2021-2022, 14 junior high schools, 14 high schools and four special needs schools). Of those, the district has 461 special education runs transporting about 1,500 students with special needs daily.

A team of more than 400 drivers covering a total 1,337 routes a day makes it all happen.

Farnes rattles off the numbers not fazed by the feat his staff pulls off every day.

"Raymond and Cynthia have heard me say this before," said Farnes, referring to **Raymond Bird** and **Cynthia Raffensparger**, who handle routing for special needs

students. "They do all the hard work and I talk about it. We have a great team here."

Alpine ISD saw a drop in ridership during COVID, but during this time, the district turned to Transfinder's award-winning **Routefinder PLUS** routing software to prepare for the future.

"We essentially started using **Routefinder Pro** two years ago and **Viewfinder**," Farnes said. He said when the pandemic forced the school to shut down in-person instruction, it seemed like the right time to level up to Routefinder PLUS.

"We jumped into PLUS and really implemented it before school reopened in the fall," he said. "I can't overstate how good our team is and what they do."

Farnes said his team shared a number of the improvements they saw in Routefinder PLUS to help them with routing students with special needs.

Door-to-Door
"Curb approach is huge for special needs students," Raffensparger said. "In addition to that, it is important that we have the ability to create door-to-door stops from the map or copy it from another trip so that you get it in the exact same place. Those functions are huge. The variety is really good depending on what we need given the specific needs of those students, whether they're in a wheelchair or a walk-on or we've got a child that likes to run. Having that variety is very helpful and PLUS gives us that."

Easy Searching
Raffensparger, a *GIS specialist* who handles *special education* routes on the east side of the district, listed a number of tools that are helpful for her.

"Being able to pull up the extra grids," said Raffensparger, who has worked at the district for a decade. "If I go into my trips, and if I've got all the trips from one school open, I can click on just a trip or two and I can find the students for just that trip. I don't have to sort through all 81,000 kids or even the 2,200 special ed kids we've got. I can deal with just those five or six students. That has been very helpful for me. I like being able to use the trip grids, something we didn't really have before, because I can see where the students live and see where they fit best on a trip."

Multiple User-Defined Fields
"There is no limit in PLUS," said Bird, referring to user-defined fields that can be created. Bird is a *routing technician handling special education routing* for the west side of the district. "This is very helpful to us. A big one that I use on a day-to-day basis is our special needs placement with one called *SPED Placement* that includes all the different classifications for our students, whether they be a life skills student, an emotionally disturbed student, mild, moderate … we can pull up more with those than just using disability codes. I can't always search by disability We created a user-defined field for that. I need to deal with special needs students, I make sure that I have that on my grid. Then instead of filtering through 814,000 students I'm looking through 1,200."

Farnes agreed that creating unlimited user defined fields was crucial and a sign that Transfinder continues to improve its technology as a result to client feedback.

"Just having more options with those fields, Transfinder is listening to clients and putting things in that are going to be beneficial," Farnes said.

Find Candidates and Find Schedules

Farnes said his team likes "the ability to open up multiple tables, multiple data grids, multiple map sources," Farnes said, "and the ability to customize the map layout. There are times where we want to see a lot of the underlying data, a lot of information on the base map. But at other times we just want it real plain. We just want the roads or we want the aerial imagery and be able to jump back and forth between those."

Raffensparger said another feature she likes is *Find Candidates*.

"Find Candidates is helpful for me," Raffensparger said. "The fact that you can pull up multiple trips in the canvas map," noting that she will sometimes have morning trips open on one side of her screen and afternoon trips open on the other side of her screen "so that I make sure I adjust things the same way on both trips." It is particularly important now as the district prepares for an influx of students.

"Right now, I'm bringing back quite a large number of students that haven't attended for an entire year and rearranging routes in order to get drivers available," she said. "Because I can move from one trip to the next trip when I've got multiple trips opened, I can make sure I move the right kids under the right trips."

New Students

Raffensparger said with PLUS adding new students and getting that information to drivers is quick and easy.

"One of the reports I use most is when I add a new student. We have developed a sheet that gives the driver a snapshot without going through the turn-by-turns or the student lists to put out all the information," she said. "It's on one sheet in a condensed form that I can print out and hand to the driver so they've got immediate information without any extra notes for this new student."

Bird noted: "When adding a new special needs student, being able to right click on their information on the grid and go down to 'Find Candidates,' it'll pick the closest stops that meet that criteria for that student," he said, adding the function provides a better alternative and avoids future problems.

"I have a better idea about where I can add them to a trip versus me completely putting them on a trip and having two buses overlapping, driving right past each other to pick up a kid that another bus could have easily done," Bird said.

He added that new students are automatically geocoded. "I can get them added to a bus a lot faster than we used to. I can get the driver turn-by-turns. I can get them a list that has all the new times... times that are more accurate. Overall, it has made things a bit simpler."

Find Schedules contributes to that simplicity by automatically putting a group of students at a stop and on a bus without having to go to the **Map Canvas**.

While most of this is invisible to parents, Bird said one aspect they may notice is a faster turnaround in getting their students assigned to buses.

And if changes need to be made, they can be made quicker too.

"Say there's an issue with a road closure, or a parent has moved, or we can't get to a student because it's a 'no drive' road, in other words it's too steep or it's a dead end or we can't turn that 40-foot bus around,"

Raffensparger said "Parents are understanding and if we need to adjust the map it can be done so much faster than what we were able to do in the past."

Customizable Reports and Layout
Bird said another aspect of PLUS that he likes is that it is customizable.

"Being able to customize a lot of things, whether it be a layout or the reports ourselves" is a plus, said Bird. "We've done quite a bit with the reports and we have a certain way we like to do our reports."

In the past, Transfinder would create the reports, but now individual districts can build their own, highlighting key data. In Alpine ISD's case, Bird said the district has a checkoff sheet with specific information sought, such as student names, attendance and student pictures.

Farnes likes the ability to pull pieces of information from various sources and add it in a report and set a schedule for sending reports to specific district leaders on specific days.

Same But Different
Bird and Raffensparger say while they have the same roles, they use the technology similarly in some cases and yet differently as well.

"I use the grids probably just as much as Cynthia," Bird said. "But I like the 'Find Candidate' because I don't have to open multiple trips."

Raffensparger said Bird is the early adopter in the operation.

"I still have to go and do it my other way," she said. "Until Raymond tells me (about a certain feature) I just use my work around so that I get my work done."

Truly a customized approach.