

Student Mobility 102

Multiple forces shape which modes of transportation, vehicle types, operating models, and what kinds of services and efficiencies are possible.



Student Mobility Laws of Physics

These “laws of physics” include the drivers of costs and trade-offs that determine how states, cities, districts, brokerages, and parents understand what is possible for school mobility. In order to be successful, any reimagining of school mobility must acknowledge, account for, and address these forces.

Evaluating Costs

➔ Driver Wages

Because every driver is paid for their time driving, wages are often one of the biggest recurring expenses and can represent 30-40% of the total annual operating costs. Because delivery services like Amazon and rideshares like Uber and Lyft have created new, flexible options for drivers, wage competition for school operators is fierce. Labor unions also do their part to keep wages and terms of employment competitive for workers but more costly for operators and schools.

➔ Distance & Time

The number of ground vehicles needed to provide sufficient coverage to connect students with opportunities (and how long that coverage takes) is determined by a district's boundaries and their policies around eligibility for service and choice of programs.

➔ Capital

It's expensive to expand a fleet of vehicles or replace those vehicles no longer roadworthy. While typically amortized over many years, this is a significant upfront cost. Electric vehicles and charging infrastructure present an exciting but expensive opportunity to transform school mobility fleets.

➔ Fuel

Paying to fuel and power vehicles can represent 20-30% of total annual costs, though fluctuating prices and market dynamics significantly impact those costs.

➔ Maintenance

Vehicles need regular upkeep, including oil changes, new tires, brake service, and other routine checks. Unexpected repairs are also costly. Maintenance can account for 10-20% of total annual costs. A typical lifespan for a school bus might be 10-20 years, depending on usage and care. As a vehicle ages, it costs more to operate and maintain.

➔ Compliance & Risk

Student mobility vehicles carry precious cargo, so insurance is essential. Accounting for 5-10% of total annual costs, insurance for vehicles and drivers is costly, especially for novel approaches to student mobility.

➔ **Procurement**

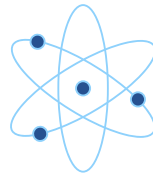
Contracts to secure vehicle fleets, drivers, and operators include profit margins for contractors and bonuses for hitting different targets. How competitive, innovative, and well-run bidding and contracting processes are at districts can greatly impact their options and ultimate costs. The length of contracts can reduce costs and risks for operators, but also affect schools' ability to make system changes.

➔ **Overhead**

Administrators, support staff, dispatchers, and supervisors working in dedicated facilities and with specialized equipment must be paid to plan, design, and run routes. Drivers must be trained and licenses and permits secured.

➔ **Technology**

While new technologies like routing software, GPS vehicle tracking, communication tools improve efficiencies and benefit districts, parents and students, they must be purchased and kept up to date.



Balancing Trade-Offs

➔ **Service Levels vs. Costs**

It's tempting to offer more customizable services – door-to-door service, apps for parents and students, broader service zones, etc, but each of those increases costs.

➔ **Service Levels vs. Reliability**

The more accommodating and customizable the service, the more complex the system and the less reliable it can become. In short, overpromising leads to under-delivering.

➔ **Distance vs. Utilization**

Because routes are typically limited to one hour, the farther a bus needs to travel, the fewer students it can transport. Vehicles “fill up with time” before you can fill them with students.

➔ **Data systems vs. Service Quality and Responsiveness**

Without strong data systems you can't adjust and accommodate changes, keep accurate records, manage complex schedules, and communicate in real time. As a result, service quality (and how it's perceived) will suffer.

➔ **Wages vs. Service Quality**

Low paid drivers and monitors have less incentive to offer quality services and are also less likely to stick around. Rehiring and training is expensive. New drivers need more support and time to learn a demanding profession and to perform safely.

➔ **Capital & Maintenance Investment vs. Long Run Costs and Safety**

Initial capital investment for good condition equipment can be expensive, but it helps mitigate maintenance costs. Cutting corners on maintenance over time ends up being expensive and dangerous.



4MATIV is transforming student mobility. With our technology and performance management platform and multi-modal approach, we get students to school for less cost and with less hassle so they can access the learning opportunities that maximize their potential. For more information, visit 4mativ.org.