

# 6 Things to Consider When Selecting a Weigh Station Bypass System





## **Moving truck freight from one point to another often comes with delays; including weather, road conditions, accidents, and potential enforcement activity, just to name a few. But what if you could eliminate, or even control some of these factors?**

Imagine greatly reducing the number of times you have to stop at each weigh station your trucks come across. How about bypassing toll payment booths and actually receiving discounts when your rigs drive by?

Trucking companies using weigh station bypass services save an average of \$8.68 and five minutes each time their truck bypasses a truck weigh station, according to a Federal Motor Carrier Safety Administration calculation.

When selecting a weigh station bypass system, two types of technologies are used. One is called radio frequency identification, or RFID, which utilizes a transponder mounted inside the windshield to identify a specific vehicle. The other is Commercial Mobile Radio Services, or CMRS. It uses cellular phone technology for identification using mobile phones, tablets and in-cab telematics devices. The end goal is the same: to receive a bypass signal alerting drivers to continue past the weigh station or inspection site they are nearing.

Each system operates differently, meaning what works well for one fleet, be it large or small or somewhere in between, doesn't automatically work for another. And owner-operator truckers have their own unique sets of needs. Therefore, consider the following factors before selecting a truck weigh station bypass system.

# 1

## **Not All Bypass Technology Platforms are Equal**

One of the primary differences between RFID transponders and cellular CMRS is the issue of reception. In this case, how well signals are transmitted between weigh stations and trucks. RFID transmits and receives signals with almost 100% accuracy. Alternatively, just like your cell phone, CMRS signals can be dropped, affected by terrain, weather, the quality of service providers, the type of cellular device or tablet, and the quality of the GPS chip set.

These factors make it very possible for a truck using a CMRS bypass system to have a reduced chance of connecting and receiving a bypass signal. Compare this to truck bypass systems using RFID technology, which are not affected by these factors and offer 99.9% signal reliability.

Another concern of CMRS is signal latency, or delays in the transmission time between the truck and the station. You don't have to worry about latency when using RFID. That's because RFID transponders have a response time measured in just a few hundredths of a second from the time the truck approaches a weigh station, transmits its credentials and the driver receives a green light to bypass. In contrast, because so many different factors affect CMRS-based weigh station bypass, a driver may get a bypass signal too late to bypass, if he or she gets one at all.

Additionally, other applications running on consumer mobile devices can delay how long it takes to get a bypass signal. And receiving a phone call at the same time may kick the phone off the app used to transmit information and receive a weigh station bypass signal.

# Transponder RFID vs. Application CMRS



## Transmission reliability:

**RFID:** More reliable and accurate signal transmissions

**CMRS:** Can be affected by terrain, weather, and device



## Transmission speed:

**RFID:** Just a few hundredths of a second for bypass message

**CMRS:** Speed varies and may display after entering off ramp

# 2

## **Compare Bypass Opportunities That Best Match Your Routes**

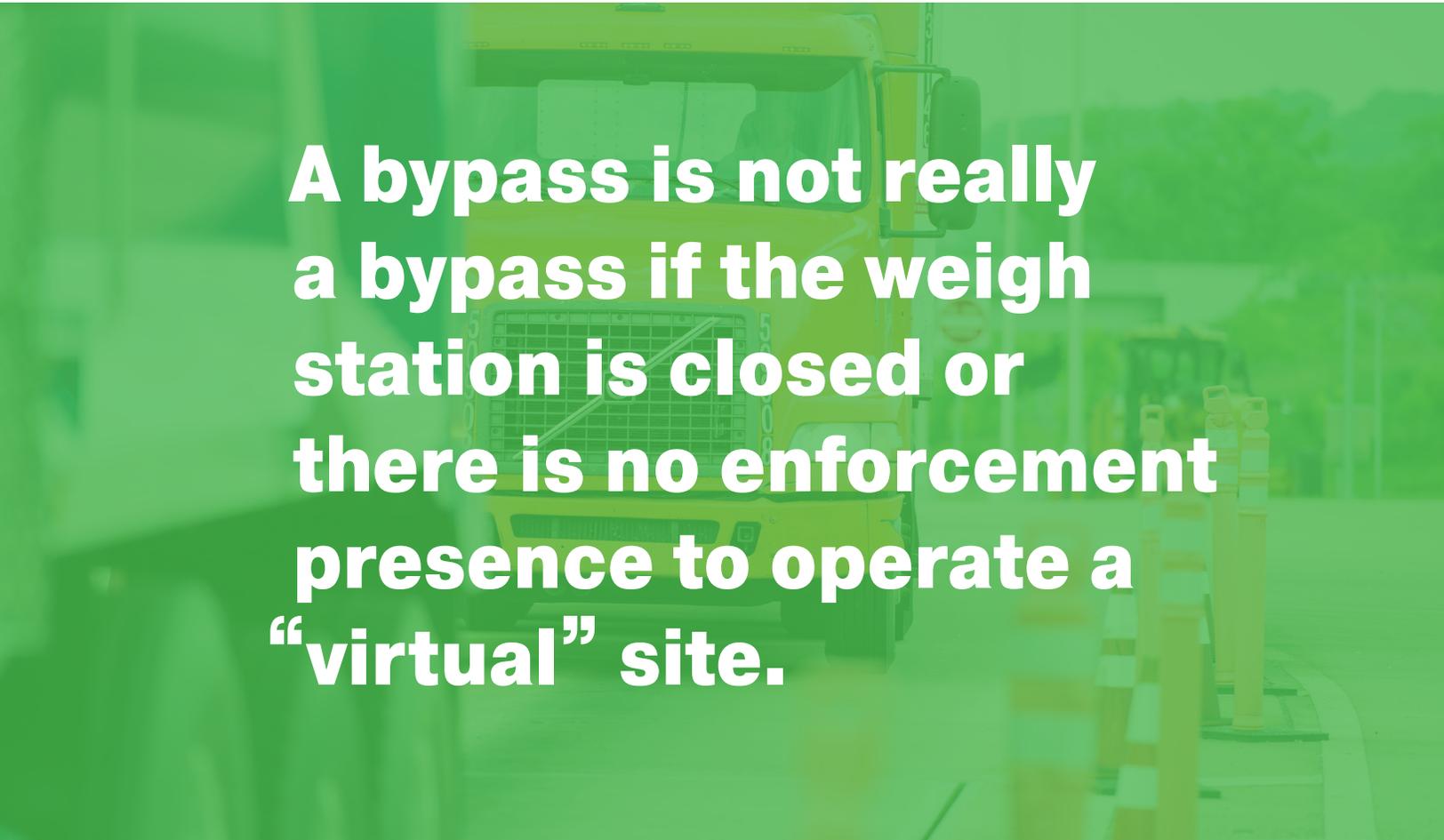
When evaluating weigh station bypass service providers, an obvious consideration is the number of service locations. However, there are big differences in how the various providers count the number of weigh station locations where they offer service.

Fixed open weigh stations are permanent facilities in regular operation. Alternatively, “mobile” sites are possible temporary positions staged along a highway by law enforcement. There is typically no active law enforcement presence at these so-called “mobile” sites except when a special targeted enforcement activity is underway, if ever. Therefore, determine where your trucks operate in relation to a truck bypass service provider’s network of fixed open sites.

Often, providers will quote the number of total bypass opportunities and savings resulting from these bypasses. Before you bank on these numbers, ask vendors if they claim bypasses of closed sites and virtual sites where no enforcement is present as true bypasses. After all, a bypass is not really a bypass if the weigh station is closed or there is no enforcement presence to operate a “virtual” site.

Another consideration when comparing truck bypass networks is the presence of weigh-in-motion scales (WIMs). Embedded in the roadway, WIMs screen a truck’s weight and transmit a signal on approach to a weigh facility. Because of the 99.9% signal reliability, RFID-based bypass systems are better suited for correctly reading WIM weights and matching them to the right vehicle every time.

Without that correlation, the screened weight could be assigned to the wrong truck, resulting in the vehicle losing out on a bypass or being targeted incorrectly for enforcement. If even one vehicle

A green-tinted photograph of a yellow truck at a weigh station. The truck is positioned on a scale, and several orange traffic cones are visible in the foreground. The text is overlaid on the image in white, bold font.

**A bypass is not really a bypass if the weigh station is closed or there is no enforcement presence to operate a “virtual” site.**

is incorrectly matched to the wrong weight, every truck crossing the WIM after that could be assigned the wrong weight, or what is called sequence contamination. This is more likely to occur near scales where there is heavy traffic traveling multiple highway lanes.

# 3

## **Ensure Safety Data is Available to Improve Your Fleet's Operation**

Weigh station bypass systems can do much more for a fleet than save time and money. Some systems offer reporting tools to help improve safety and the company's transportation operations. For example, PrePass includes InfoRM™, a safety intelligence tool that unpacks the numbers affecting your fleet's Inspection Selection System (ISS) score. This can have a profound effect on the number of times your trucks are inspected, including your ability to bypass weigh stations.

Think of this as a safety dashboard that provides everything you need to make data-driven decisions to quickly improve safety scores. For instance, you can determine what types of inspections your trucks are failing, and if there are patterns of infractions, even if the inspections are conducted at roadside and not in a weigh facility. InfoRM gives you actionable intelligence to make changes in your fleet's operations so trucks spend more time running on the road, rather than waiting at weigh stations or pulled over at roadside for inspections. Such tools are useful for the smallest fleet, including owner-operators, all the way to the largest fleets, including private carriers.

Safety intelligence data can also be shared between different departments at trucking companies, for instance, to help negotiate lower insurance rates, improve maintenance, build stronger relationships with law enforcement, or track how much money your fleet has saved bypassing truck weigh stations.

When evaluating weigh station bypass providers, discuss other software tools available as part of the platform and how you can use this data across your organization to improve safety and efficiency.

# 4

## **Pay Tolls Electronically Through an RFID-Based System**

Another difference between truck bypass systems using RFID rather than CRMS is the integration of electronic toll payment capabilities with an RFID transponder. Also, some truck bypass system providers not only integrate tolling into their service, but do it with a single transponder, as opposed to having different transponders from each tolling agency.

Even if your trucking operation rarely (if ever) has to pay tolls, having a truck bypass system that also handles toll payments is a major cost-saving benefit. Much of the current federal administration's proposed \$1 trillion infrastructure program is expected to be underwritten with private investment, and will likely result in more toll roads, bridges and tunnels. According to one study from "Beyond Traffic", tolls as a portion of state and local highway revenues have already jumped 50% since 1992. With traditional sources of highway funding drying up, along with highly efficient electronic tolling, the number of tolled facilities in the U.S. is expected to increase rapidly in the near future.

Whether you have to deal with tolls now or later, having a weigh station bypass system that can accommodate your growth will prevent headaches, hassles and cash outlays for your business.

# 5

## **Determine Just How Much You Can Save**

Time is money and money is time. Based on that, when selecting a weigh station bypass system you need to determine just how much you can save. A federal study estimates just one bypass alone is worth five minutes and \$8.68. But let's dig into that further with one case study of a fleet with just over 325 trucks.

In one year alone, company trucks received green lights from the nation's largest RFID-based system to bypass weigh stations 94.3% of the time, for more than 30,800 bypasses. That not only saved them more than 12,000 gallons of fuel, but also provided nearly 2,600 hours of productivity that allowed their trucks to just keep on driving. The bottom line? \$154,000 savings in operating costs.

**According to an FMCSA calculation, just one bypass alone is worth five minutes and \$8.68.**

# Weigh station bypass savings by the numbers

Data reflects a real PrePass customer's savings.



Fleet Size: **325 trucks**  
Time period: **1 year**



Received green lights  
**94.3%** of the time\*



**30,800 bypasses** with  
RFID-based system



**12,000 gallons**  
of fuel saved



Nearly **2,600 hours** saved



Total of **\$154,000** in  
operating costs saved

\*Affected by both technology reliability and ISS scores

# 6

## **There's Still a Place for CMRS**

There is no doubt that RFID technology for weigh station bypass is superior to CMRS, yet a cellular-based system may still be a preferred solution for some fleets.

While RFID is more reliable, it's also more expensive to install at weigh stations. In fact, HELP Inc., the non-profit provider of PrePass, has invested more than \$600 million to deploy PrePass weigh station bypassing and other services. Therefore, HELP constructs PrePass locations at heavily trafficked sites, currently 315 across the United States, or where there are proven safety benefits.

CMRS can best be deployed at low-traffic sites where there is good cell connectivity by creating a GPS geofence. As long as cellular coverage is consistently strong and the state does not use WIM weights in the bypass decision, this solution can be effective for fleets with simple bypassing needs.

Some fleets maximize bypasses with both a transponder and a mobile app working together. Such fleets can take advantage of each site that offers a bypass opportunity, while also being able to take advantage of toll management and payment services. Even within this scenario, CMRS providers instruct customers to default to the transponder message when used together.

**If you have questions regarding your routes and the benefits of transponders and mobile applications, contact PrePass at (800) 773-7277.**

**WEIGH  
STATION**





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