CyRide Signals

August 14, 2020

ADMINISTRATION

COVID-19 Update: It has been approximately 147 days since we have had classes at ISU. In a few days, students will be starting classes for the fall semester. We are all holding our breath and crossing our fingers that this semester goes well. We all thought we would see a second wave of infection, but we are still in the first wave. On July 15, we went back to boarding passengers through the front door and collecting fares. The shop has done an awesome job of getting the operator partition installed. Jon Hatt started a contest to rename the barrier, as it seemed too negative. "Deflector Shield" was a favorite name but fearing too much sci fi, "Operator Partition" won. ISU will be starting classes up a week earlier and will be holding class on the Labor Day holiday this year, which will be a change for CyRide. Finals will then start on a Saturday with all classes completed by the Wednesday before Thanksgiving. After Thanksgiving, Iowa State will be on break until the spring semester. At this point, no changes have been made with the start of 2021 spring semester. The following table explains specific service through the fall semester:

Fall Service Dates	Schedule Change
August 10 – August 16	School Year Break Schedule (with modifications)
August 17 – September 6	Regular School Schedule
September 7 – LABOR DAY	Regular "Weekday" School Schedule
September 8 – November 25	Regular School Schedule
November 26 – THANKSGIVING DAY	NO SERVICE
November 27 – January 10	School Year Break Schedule

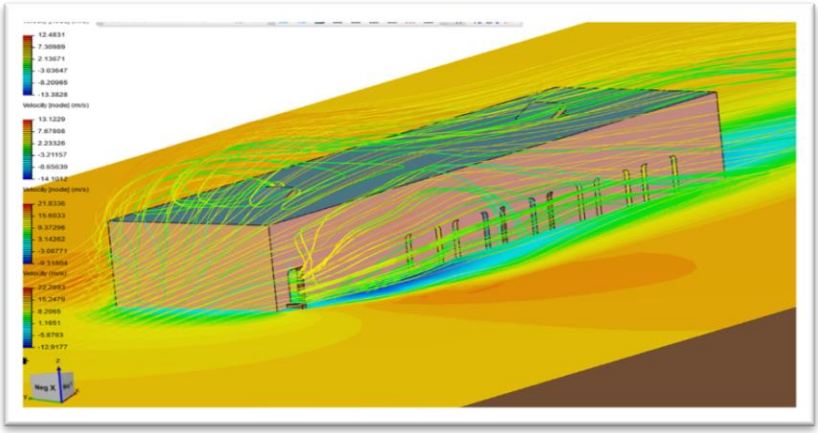
Face Coverings: City Council made the wearing of face masks or coverings mandatory in city buildings and on city property. With that in mind we did make the wearing of a face mask or covering mandatory on CyRide buses. Iowa State University has tried to keep us informed of decisions they make which may affect our service. Iowa State has made wearing face masks and coverings mandatory on campus, out in the community, and on CyRide's buses. Ames Schools has also worked with us to make masks mandatory for Ames School students when they are on the bus.

OPERATIONS

Help a Laneworker: It's hot and there is an occasional shower, so make sure when you return to base to park your bus at the end of your shift, please close all windows and roof vents. Walk through your bus and pick-up any rubbish or lost items. Doing the above will make the laneworker's life easier when they clean and refuel your bus.

Change of Address: If you have moved over the summer be sure to fill out a change of address form. You can get these forms from the Dispatchers and please return them to Dispatch after filling them out.

Air Flow on Buses: Earlier this summer, ISU contacted CyRide asking about airflow on buses. Specifically, they wanted information regarding airflow direction and frequency of air exchange. As luck would have it, CyRide happens to have an employee (Kevin) with a degree in aerospace engineering who was able to gather this information.



Using something called Computational Fluid Dynamics (CFD) analysis in a program called SimScale, we were able to run virtual wind tunnel simulations with simple 3D models of our buses in various window/roof vent configurations. This allowed us to find fluid (air) flow rates into and out of each window/vent. The goal was to find out about how long it takes to cycle all the air from the inside of the bus to the outside and replace it with fresh air in different configurations. Fortunately, we were successful in learning a lot in this process. Some of the things we learned include:

- The inside of a standard Gillig Low Floor bus contains about 80 cubic meters of air.
- Average speed of a CyRide bus on any given route is approximately 6 meters per second or 13 mph.
- At this speed, with all windows and roof vents open, it takes about 51 seconds to cycle 80 cubic meters of air out of the bus and replace it with fresh air from outside. This is for buses with passenger windows that slide side to side.
- For buses that have the tilt-in style passenger windows, this time is increased to about 71 seconds.

There were a few other things CyRide was able to do with this analysis. For one, we were able to confirm our hypothesis that having more windows open results in air cycling more quickly. This seems obvious, but still, it was nice to actually confirm it.

Another analysis completed was to see not only how quickly air moves in and out of the bus, but in what direction the air flowed while inside the bus. Did you know that as the bus moves through the air it creates a very low pressure area on the outside just behind the windshield? This means that air on the inside of the bus actually tends to flow from back to front as this low pressure area pulls air toward itself. This also means that since the driver window is the closest to this low pressure area, it is the single biggest contributor to air flow in the bus. Closing this window nearly DOUBLES the amount of time it takes to cycle air through the bus!

After completing this CFD analysis, we created a simple tool to visualize air flow and took it out on an actual bus. Using this tool, we were able to confirm the findings of the analysis. Overall, it was a great success!

In light of what we found, we will be asking drivers to keep as many windows and roof vents open on their buses as possible as we move into fall. Obviously this will not always be practical as Iowa weather is not always very cooperative. But on days when it's not too hot or too cold or too rainy, please keep all of your windows and roof vents fully open to help keep fresh air moving through the bus.

HIRING AND TRAINING

Mind the Line: Please pay particular attention to the yellow line painted within the garage. They serve a useful purpose. These lines help drivers move safely within the parking lanes and into and out of the garage. When parking your bus in the garage, keep the left side of your bus positioned parallel along the line. The left rear and front tires of your bus should be positioned next to or within two inches of the yellow line. Parking along the guide line ensures your bus is properly positioned and safely away from other buses and fixed objects like walls, water lines, air hoses, etc. Parking askew of the guide line (see photo) makes it more difficult for other drivers to park and sets your bus up for a preventable accident. Do not be sloppy when parking. Take the time to properly align your bus up when parking. Keep your bus straight and mind the line!

Can You Train a Lot? Instructors, if you are willing to train more than three shifts per week, please let Jenny know so we can plan accordingly before we get many new trainees in the door over the next 3 months. In addition, if you find yourself getting burned out on training or need a break, please talk to Jenny. We would rather reduce your training hours than have you get to the point where you do not want to train at all.

Perfecting Your Skills "Setup Turns": Setting up turns is an important skill at CyRide. It allows us to make tight turns while keeping our right side protected from vehicle intrusions. Most of us know the mechanics of a setup turn: checking our mirror before setting up, starting the setup 25 feet from the intersection, turning the wheel back when you can see down the curb line. What is easy to forget is the critical role that speed plays in a setup turn. To be done effectively, they must be done SLOWLY. If a setup turn is done too quickly, the right side of the bus is moved away from the curb line as though you were performing a lane change. As you can imagine, if you allow enough room for a car to enter the space between you and the curb as you are proceeding around the corner, a serious collision can result. Next time you do a setup turn; carefully watch your right mirror to see how far away from the curb your rear tire travels. If you find yourself to far from the curb, try slowing down your turn.

FLEET AND FACILITIES

New Vehicles:

CyRide's three new Gillig buses anticipated for delivery over the summer 2020 were delayed until October 2020 due to COVID-19. These buses will replace 711, 712 and 716 which were required to have their bus frames cut as well as engines crushed as a condition of receiving Volkswagen (VW) settlement funding of $170,640 towards this purchase. Photos within this article are pictures of the required documentation that will be submitted to the Iowa DOT with the request for payment once the new bus invoices have arrived. While this demolition was

considerably more work for the Shop, the Iowa DOT wants to ensure these vehicles will not operate again within Iowa or anywhere. Thanks to all those involved for documenting this demolition and wading around in the mud at the scrapyard. As a result of this additional state funding along with 85% federal funding, CyRide's local contribution for our new three Gillig buses will be only $45,000 or 3% of the total cost.

Additionally, two new relief Ford Escape vehicles were purchased over the summer and will be ready for fall service shortly.

The procurements scheduled over the next year include:

- 2 – Two Battery Electric buses (replaces 778, 779)
- 1 – One Articulated bus (replaces 7130)
- 4 – Four 40-foot heavy duty buses (replaces 7117, 7124, 7133 and expansion bus for Lilac route)
- 6 Minibuses (replaces 333,334,335,336,337,338)

Bus Stop Signs, Benches, and Shelters: When you see missing or damaged bus stop signs, rubbish strewn, or damaged bus shelters and/or benches, please record this information on a maintenance card. The maintenance card should be given to the dispatcher at the end of your shift. If damage, such as broken glass within the bus shelter, creates a potential hazard to passengers, notify the dispatcher immediately. Your timely reporting assists us in keeping CyRide safe, clean, and professional looking.

BREAK ROOM COMMITTEE CORNER

Nothing Planned: We are sad that many events we would normally have in the Breakroom will not be going on this summer and fall. If things change, we will schedule activities. Soon as COVID-19 is past us, we are going to need cake to celebrate.