



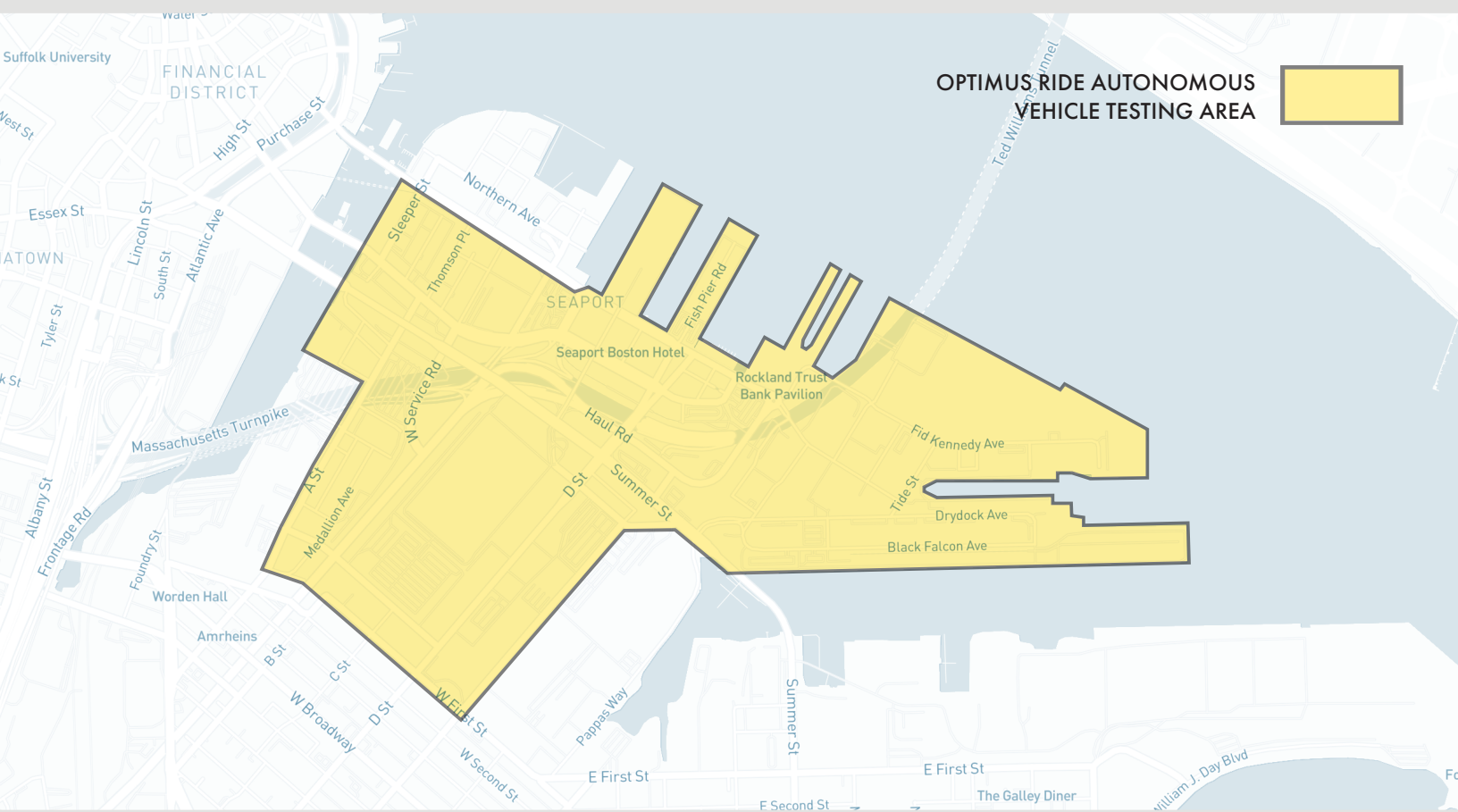
**Q32020**  
**PROGRESS REPORT**  
**AUTONOMOUS VEHICLE TESTING**  
**CITY OF BOSTON**

## ABOUT OPTIMUS RIDE

Optimus Ride designs, builds, and operates customized electric and autonomous transportation solutions for low-speed geofenced locations, from residential communities and mixed-use developments to office/industrial parks, ports, airports, academic campuses and city zones. Our company is based out of the original Autonomous Vehicle Testing Zone in Massachusetts, the Raymond L. Flynn Marine Park within Boston's Seaport District. Here, we conduct the majority of our research and development activities which prepare our autonomous mobility system for commercial deployment. Presently, we operate commercial deployment programs in New York, Virginia, Washington, D.C., and California. Each system is tailored to meet community needs for passenger service and last-mile logistics. We are grateful for the continuous support we have received to test automated vehicles on public ways in Massachusetts. Your work makes our research, development, and commercialization efforts possible.

Thank you,

**The Optimus Ride Team**



## TESTING ACTIVITIES

After spending the month of June preparing to resume on-road testing, in July, we relaunched our autonomous testing operations in the Seaport, driving over 1,000 miles. As part of this, we expanded testing to a new vehicle platform and increased our system capability for traffic light detection and multi lane driving.

Optimus Ride designs its autonomous driving system (ADS) to complement any vehicle platform. As part of this, we have successfully incorporated our ADS onto two vehicle platforms, the Polaris GEM® e4 and Polaris GEM® e6. Over the course of the third quarter, we began to test our ADS on a new vehicle platform, which enables further diversification of our operational design domains. For example, this enables us to drive longer ranges, withstand harsher environmental conditions, and travel at higher speeds. Initially, we tested our ADS on the new platform on a closed track. During closed track testing, we verified basic autonomous driving capabilities to verify the system was behaving as intended. Once we validated the basic system performance of our ADS on the new platform to our operational and safety standards, it officially joined our fleet of testing vehicles on public roads.

Beyond adding to our vehicle platform capabilities during Q3, we also expanded the technical and operational capabilities of our ADS for traffic lights and multi lane roads. This accomplishment builds on our extensive data collection efforts on traffic lights over the past few quarters. To do this, we began testing our system's capability to detect and respond to traffic lights first in simulation, then in a closed course, and finally in the Seaport under strict testing guidelines. As part of this process, we sought confirmation that our system can detect and maneuver multiple traffic lights as expected during testing, and eventually traversed select regions of the Seaport under the new system capabilities. Similarly, we launched testing of multi lane driving to confirm our vehicles can change lanes and respond accordingly to traffic conditions.

In all, testing efforts conducted in Q3 contribute to the robustness of our system's capabilities and expand our operational domains. Combined, they support service operation at higher speed regimes and roads with greater complexity while maintaining a commitment to safety and passenger comfort.



## COVID-19 UPDATE

During Q3, the Optimus team continued to uphold strict safety standards in Massachusetts and at our commercial sites across the country. We continue to enforce social distancing measures and require mask-wearing for employees working in our facilities and during in-vehicle activities. Employees are also required to self-report coronavirus symptoms or exposure so we can respond and contact trace appropriately. We are thankful to the Commonwealth of Massachusetts and the City of Boston for their leadership.

## COMMUNITY ENGAGEMENT

At the start of 2020, we began to scope out opportunities for community engagement. We have continued to follow up with prospective community partners throughout Q3 and look forward to sharing details regarding a local collaboration in the Q4 2020 report. For more information regarding our service offerings or to communicate with us, [please refer to our website](#).

## TAKEOVERS

The takeover methods used in Optimus Ride's vehicles are designed to ensure that the Human Machine Interface (HMI) is clear, consistent, gives context, and provides operators the necessary feedback about the system. The system is designed to disengage autonomous control and enable manual control by the safety driver when a takeover is initiated. The safety driver can immediately take control using the brakes, throttle, or steering wheel, for example. Given the experimental nature of Optimus Ride's testing operations in Q3, we have no notable takeovers to report.



# GENERAL REPORT

## FEEDBACK FOR MUNICIPAL AND STATE TRANSPORTATION STAKEHOLDERS

The lanes for the roundabout connecting Northern Ave and Massport Haul Road were recently repainted, changing what was formerly a single lane road into a dual lane road at the intersection. At the same time, the roundabout itself has not been repainted, and the new feeder lanes have not been painted with lane control signs. As a result, road users in both directions are having difficulty navigating the new right hand lanes. Given the lack of lane controls, road users on both the right and left lanes are currently turning right, going straight, and sometimes turning left. Given our observations, we would recommend further traffic study to evaluate potential opportunities to improve the safe maneuvering through this section of the Seaport District.

## GOALS FOR CURRENT AND FUTURE TESTING, AND/OR PROPOSALS FOR CHANGES

Optimus Ride has been working with the City of Boston, MassDOT, and Massport to gain increased access to the South Boston Waterfront Bounded Test Area. During Q3, Optimus Ride successfully requested extensions to test autonomously on Congress Street from Dorchester Ave to East Service Road and Seaport Boulevard from D Street to Sleeper Street. We also received access to test autonomously on Sleeper Street, Stillings Street, Farnsworth Street, and East Service Road. These new roads will enable us to test autonomously in more complex road conditions, including greater traffic density and diverse speed regimes. We appreciate the City of Boston and MassDOT's consideration and approval of our road network expansion request.

## DESCRIPTION OF ALL ADS SYSTEM FAILURES, CITATIONS, OR VIOLATIONS RECEIVED DURING TESTING

After Q3 2020, Optimus Ride conducted an internal audit of ADS system failures, citations, and violations received during testing. During this period, Optimus Ride has no system failures, citations or violations to report.

## PILOT SERVICE TESTS

Optimus Ride is not providing pilot service tests at this time in the State of Massachusetts. For more information regarding the services we provide, our commercial deployment sites, or general inquiries, please refer to our website: [www.optimusride.com](http://www.optimusride.com).

