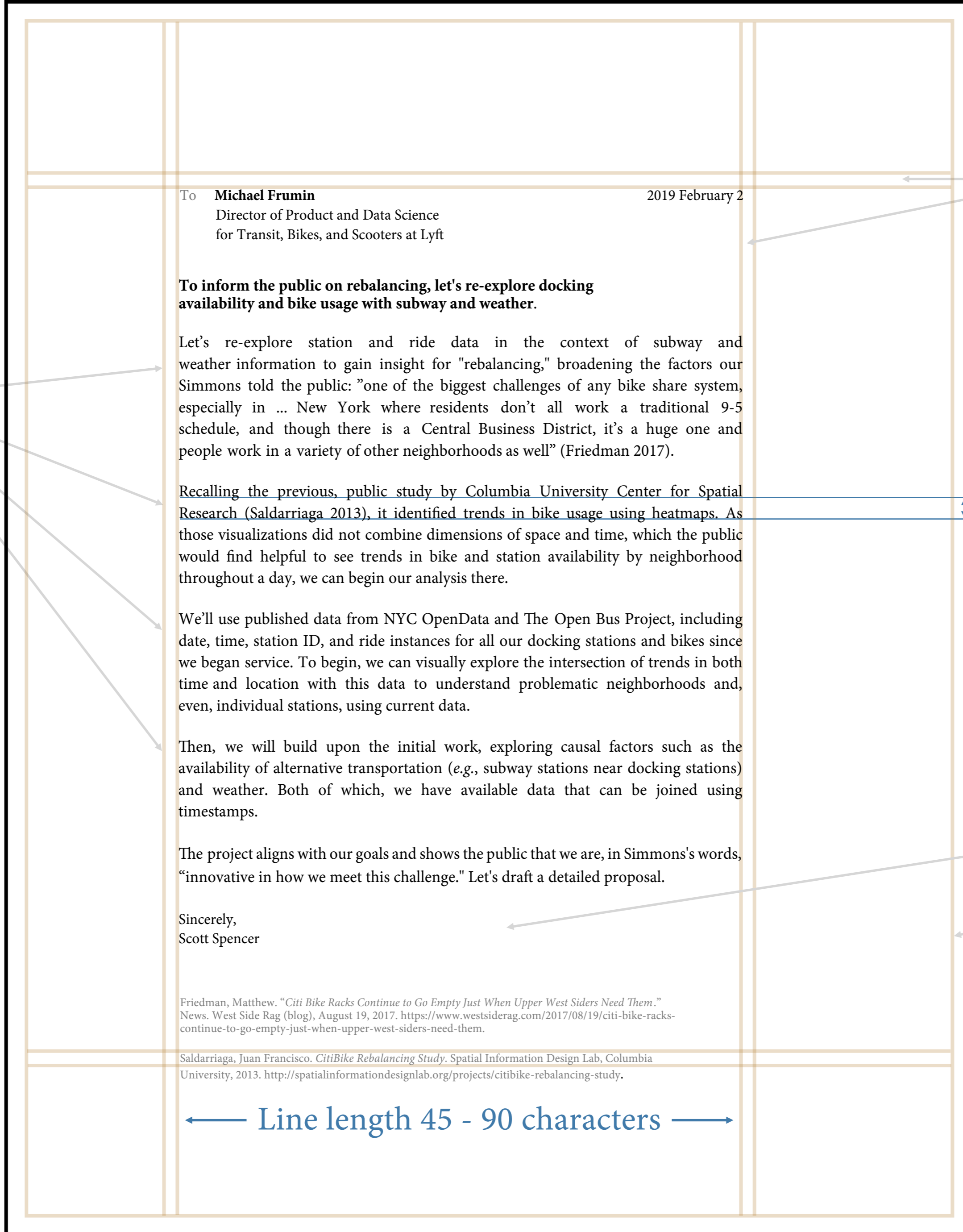


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To **Michael Frumin** 2019 February 2  
Director of Product and Data Science  
for Transit, Bikes, and Scooters at Lyft

**To inform the public on rebalancing, let's re-explore docking availability and bike usage with subway and weather.**

Let's re-explore station and ride data in the context of subway and weather information to gain insight for "rebalancing," broadening the factors our Simmons told the public: "one of the biggest challenges of any bike share system, especially in ... New York where residents don't all work a traditional 9-5 schedule, and though there is a Central Business District, it's a huge one and people work in a variety of other neighborhoods as well" (Friedman 2017).

Recalling the previous, public study by Columbia University Center for Spatial Research (Saldarriaga 2013), it identified trends in bike usage using heatmaps. As those visualizations did not combine dimensions of space and time, which the public would find helpful to see trends in bike and station availability by neighborhood throughout a day, we can begin our analysis there.

We'll use published data from NYC OpenData and The Open Bus Project, including date, time, station ID, and ride instances for all our docking stations and bikes since we began service. To begin, we can visually explore the intersection of trends in both time and location with this data to understand problematic neighborhoods and, even, individual stations, using current data.

Then, we will build upon the initial work, exploring causal factors such as the availability of alternative transportation (e.g., subway stations near docking stations) and weather. Both of which, we have available data that can be joined using timestamps.

The project aligns with our goals and shows the public that we are, in Simmons's words, "innovative in how we meet this challenge." Let's draft a detailed proposal.

Sincerely,  
Scott Spencer

Friedman, Matthew. "Citi Bike Racks Continue to Go Empty Just When Upper West Siders Need Them." News. West Side Rag (blog), August 19, 2017. <https://www.westsiderag.com/2017/08/19/citi-bike-racks-continue-to-go-empty-just-when-upper-west-siders-need-them>.

Saldarriaga, Juan Francisco. *CitiBike Rebalancing Study*. Spatial Information Design Lab, Columbia University, 2013. <http://spatialinformationdesignlab.org/projects/citibike-rebalancing-study>.

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