



February 19, 2024

XXXXXX

Managing Director of Environmental Sustainability
Southwest Airlines
2702 Love Field Drive
Dallas, TX 75235

Re: Contrail Avoidance Efforts by Southwest Airlines

Dear XXXXX,

We write to thank you and Southwest Airlines (“**Southwest**”) for your commitments to tackling climate change through setting ambitious goals, implementing a detailed strategy to lower and eliminate emissions, and creating partnerships which exemplify aviation’s push toward sustainability. As the largest domestic carrier in the U.S., your leadership is vital to reach the aviation industry’s goals.

Our organization, End the Lines (“**ETL**”), is a nascent group which supports the aviation industry’s path to mitigating its influence on climate change. We believe eliminating warming contrails is an achievable and effective means of significantly reducing the industry’s climate impact. We plan to come alongside policy makers across the U.S. to encourage the necessary changes to make contrail management a nationwide standard.

Our website, www.endthelines.org, provides resources to help visitors understand how contrails impact our climate, the technology being developed to reduce this impact, and the key players – such as Southwest – making contrail avoidance a reality. We also offer subscribers a quarterly newsletter with updates and insights into the exciting development of contrail avoidance technology. We have learned a lot in the process and enjoy sharing our findings.

A. The Aviation Industry Is Responsible for a Significant Portion of Global CO₂ Emissions

As you know, climate change is one of the biggest challenges facing our world today. According to the World Economic Forum’s 2022 Global Risks Report,



climate change poses severe global risks including extreme weather, biodiversity loss, natural resource crises, debt crises, and environmental damage.¹

Unfortunately, the aviation industry is responsible for around 2.5% of global CO₂ emissions,² and the European Commission predicts aviation's greenhouse gas emissions may increase by more than 300% over 2005 levels due to increased air traffic.³ Thankfully the aviation industry recognizes the severity of this crisis and ambitiously aims to achieve net-zero emissions by 2050. Southwest has stated the same ambition and your work as Director of Sustainability has made a tremendous impact on how Southwest approaches sustainable aviation.

B. Southwest Paves the Way for Sustainable Aviation

We appreciate Southwest's dedication to pursuing both short and long-term solutions to meet the 2050 goals set by the aviation industry with such initiatives as your 2030 goal to reduce emissions intensity by 25% and 2035 goal of 50% reduction. We are particularly encouraged that Southwest has partnered with organizations like 4Air, Ascent, the RMI Contrail Task Force, and others, and is a founding member of the Aviation Climate Taskforce.⁴ These alliances show your commitment to collaboration across the industry.

We also admire Southwest's commitment to advance the development, production, and use of sustainable aviation fuel ("SAF") by investing in companies like SAFfiRE. As you are aware – more so than us – the need to quickly transition from petroleum-based jet fuel to more sustainable alternatives is a necessary step toward zero emissions. So, we thank you for your efforts and encourage you towards your goal of replacing 10% of your jet fuel consumption with SAF by 2030.

C. Addressing Aviation's CO₂ Emissions is Not Enough

Realistically, addressing only CO₂ emissions will not fully alleviate aviation's climate impact. Aviation contributes to global warming through both CO₂ emissions *and* net non-CO₂ contributions – such as contrails – with non-CO₂ contributions

¹ [Global Risks Report 2022 | World Economic Forum | World Economic Forum \(weforum.org\)](https://www.weforum.org/reports/global-risks-report-2022).

² [Climate change and flying: what share of global CO₂ emissions come from aviation? - Our World in Data](https://www.ourworldindata.org/climate-change-and-flying).

³ [Targeting true zero aviation | World Economic Forum \(weforum.org\)](https://www.weforum.org/reports/targeting-true-zero-aviation).

⁴ [Southwest Airlines Sustainability Partnerships \(southwest.com\)](https://www.southwest.com/sustainability)



constituting approximately two-thirds of net radiative forcing to global warming.⁵ Research shows that the aviation industry cannot meet its 2050 targets unless it addresses *both* CO₂ emissions and non-CO₂ emissions.⁶

D. Contrail Avoidance is Necessary to Address Aviation's Climate Impact

Contrail formation must be managed to fully address the totality of aviation's climate impact. Studies show that contrails warm the planet twice as much as CO₂ emissions⁷ and are responsible for the majority of aviation's non-CO₂ contributions.⁸ Therefore, the aviation industry must reduce contrail formation to significantly reduce radiative forcing caused by non-CO₂ contributions.

Thankfully, contrail avoidance technology is developing at a rapid pace. Successful trials like American's partnership with Google and Breakthrough Energy have demonstrated positive results and shown this technology may soon be implemented across the aviation industry. Likewise, Southwest's partnership with GE Aerospace to develop an engine-informed contrail prediction system shows great promise for forecasting persistent contrails.⁹

E. End The Lines Supports Southwest's Research and Development of Contrail Avoidance Technology

To that end, we would like to congratulate Southwest for its collaboration with GE to develop and test contrail prediction technology. We are encouraged by the prospect of this project providing pertinent research. Our subscribers particularly enjoyed our post discussing this partnership and look forward to the results. We have had the pleasure of featuring Southwest's industry-leading efforts on our website and would love to feature Southwest in future blog posts and newsletters.

As net-zero milestones rapidly approach, we encourage Southwest to continue working with businesses, alliances, governments, non-governmental

⁵ [The Contribution of Global Aviation to Anthropogenic Climate Forcing for 2000 to 2018](#)

⁶ *Id.*

⁷ [Updated analysis of the non-CO2 climate impacts of aviation and potential policy measures pursuant to the EU Emissions Trading System Directive Article 30\(4\)](#)

⁸ [The Contribution of Global Aviation to Anthropogenic Climate Forcing for 2000 to 2018](#)

⁹ [Predictive Real-time Emissions Technologies | Aircraft Induced Lines in the Sky](#)



organizations, universities, and international organizations, to pursue further development and implementation of contrail avoidance technology. As you said on the Sustainability in the Air podcast, “any progress that one of us makes is progress for the industry.”¹⁰

We at ETL ask that you please respond and confirm your commitment to reducing Southwest’s non-CO₂ contributions.

We are interested to hear what you are currently doing with regards to contrail management and what you plan to do in the coming year.

We look forward to your response and to covering Southwest’s efforts to making contrail avoidance and SAF use the standard across the aviation industry.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Caldwell". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Michael Caldwell
Executive Director

¹⁰ [How Southwest Airlines Maintains Affordability While Pursuing Sustainability | Sustainability in the Air Podcast](#)