Study Finds Proposed Aerial Gondola to Dodger Stadium Will Do Little to Reduce Traffic and Emissions

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University of California Los Angeles

Executive Summary

Los Angeles Aerial Rapid Transit (LA ART), a subsidiary of former Dodgers owner Frank McCourt's company McCourt Global, wants to build an aerial gondola to take people from Union Station to Dodger Stadium. Promoters of the gondola claim that it will take 3,000 polluting cars off neighborhood streets and the 110 freeway before and after Dodger games, leading to a net reduction in greenhouse gas emissions.

Transportation researchers from the University of California, Los Angeles (UCLA) examined these claims using a state-of-the-art transportation simulation model and found that the gondola could reduce traffic on major roads around Dodger Stadium on the night of a sold-out game, but the impact would likely be very limited. They found that the gondola likely would take only around 608 cars off the road. The gondola is thus unlikely to significantly reduce greenhouse gas emissions and traffic overall.

Methodology

The UCLA researchers — led by Dr. Brian Yueshuai He and Dr. Jiaqi Ma in the UCLA Mobility Lab at the UCLA Samueli School of Engineering — used the "LA Sim" model they created based on activity-based travel demand and agent-based simulation models. The model is grounded in the theory of "discrete choice," for which Daniel F. McFadden won a Nobel Prize in economics in 2000. Based on real data about road network, traffic, public transportation, and other modes of moving around the city, including walking and bicycling, LA Sim simulates the individual choices that millions of travelers will make when something changes, such as adding another form of transportation, like a gondola to the Los Angeles transportation network.

The researchers caution that this simulation only models the probable use of the gondola for a sold-out night game and further research could reveal different scenarios for a day game or double-header, for example. But the research does model the most likely scenario for fans to choose the gondola — when traffic around the stadium is likely to be most heavy. Around 85% of baseball games played at Dodger Stadium are night games, starting at 7:10pm.

Figure 1: Traffic simulation results by the hour

Findings

- **Contrary to claims from LA ART, researchers found that the gondola would not significantly reduce traffic around Dodger Stadium.** Results showed the gondola would likely slightly reduce traffic on some roads around the stadium for a sold-out night game and increase traffic on others, leading to little reduction in greenhouse gas emissions. The red lines in Figure 1 above indicate road segments that have a higher traffic volume after the proposed gondola is added to the traffic simulation. The blue lines indicate a decrease in traffic volume. According to the simulation, the total traffic volume would likely be reduced by around 0.9% (less than 1%) on the roads surrounding the stadium if the proposed gondola is built.

- **It's unlikely the gondola would contribute to a significant net decrease in greenhouse gas emissions.** Approximately 608 cars would be taken off the road, not nearly close to the 3,000 LA ART claims. Most of the people who choose the gondola in the simulation — 4,470 —board the gondola at Union Station, with another 220 passengers boarding at a station proposed to be located at Los Angeles State Historic Park near Chinatown. With only 4,690 people taking the gondola in total and of those 2,500 estimated to be regular users of the Dodger Stadium Express clean energy buses there would only be 2,190 new people taking public transportation to the game using the gondola. The average car parking at the stadium carries 3.6 people, which means that the approximate number of cars taken off the road would be around 608. The simulation only models the number of passengers connecting to the gondola via public transportation, on foot or by bike. It does not model people who would drive to Union Station or Chinatown to take the gondola. However, people who drive to those stations to take the gondola would not contribute to a net reduction in traffic or greenhouse gas emissions.

- **The gondola would carry fewer passengers than LA ART has claimed.** LA ART originally claimed that the gondola could carry up to 5,000 passengers per hour on game days. Researchers found that the gondola is likely to carry fewer than a total of 5,000 passengers to Dodger Stadium — 4,690 according to the simulation — even when the service is provided free with a game ticket for a sold-out night game like the playoffs. In a recent parking study, LA ART revised their claim, estimating that 6,000 would ride the gondola to games by 2026, with

4,350 arriving to the gondola via public transportation. The project's Draft Environmental Impact Report contains the same estimate, which corroborates the UCLA estimate of ridership if the gondola were in operation today.

- **Fewer people would take the gondola after the game – resulting in more traffic and emissions.** In the simulation, some fans — around 2,500 — seem to switch from the free Dodger Stadium Express buses to the gondola on the way from Union Station to a sold-out game, reducing the use of that service by close to half of the passengers it has carried to playoff games in the past. But about half of those passengers — more than 1,000 — seem to switch back to the Dodger Stadium Express on the way home, perhaps to avoid having to wait for a gondola car. Only 1,380 fans take the gondola on the way home in the simulation. This suggests that fans are unlikely to wait in line for the gondola after the game, instead taking the Dodger Stadium Express or perhaps opting for a ride-share, which would increase traffic and greenhouse gas emissions after the game.

- **Few people would use the gondola as a form of transportation other than to get to or from games.** The simulated use of the gondola during the daytime before the game suggests that very few people would use it as a form of transportation outside of getting to and from games: in the simulation, only 60 people — around one gondola carload — traveled to Dodger Stadium during the day, and only 140 passengers traveled from the stadium to Chinatown or Union Station during the day.

- **The model produced very similar results at different costs for a gondola trip.** LA ART previously announced that a gondola trip would cost $15. Later, they announced that game ticket holders could ride the gondola for free. They have also said that local rides could be purchased for a standard Metro fare. The researchers modeled two scenarios: 1) $10 for residents and free for game ticket holders, and 2) free to the public, and found very little difference in the results, indicating that residents are more likely sensitive to travel time rather than cost. One key factor is that the service area of the gondola is limited and may not attract residents to choose it for daily travel.

About the Researchers

Dr. He is an Assistant Research Scientist at the UCLA Mobility Lab. He has extensive experience in big data analytics, transportation system analysis, and transportation policy evaluations. In the scope of cyber-physical systems, his research enables interactions between the physical infrastructure and virtual cyber systems by adopting data-driven techniques to support long-term urban system planning, management, and decision-making.

Dr. Ma is an Associate Professor in the UCLA Samueli School of Engineering and Associate Director of UCLA Institute of Transportation Studies. He has led and managed many research projects funded by U.S. DOT, NSF, state DOTs, and other federal/state/local programs covering areas of smart transportation systems, such as vehicle-highway automation, Intelligent Transportation Systems (ITS), connected vehicles, shared mobility, and large-scale smart system modeling and simulation, and artificial intelligence and advanced computing applications in transportation. He is an Associate Editor of the IEEE Transactions on Intelligent Vehicles and IEEE Open Journal of Intelligent Transportation Systems and Journal of Intelligent Transportation Systems. He is Member of the Transportation Research Board (TRB) Standing Committee on Vehicle-Highway Automation, Member of TRB Standing Committee on Artificial Intelligence and Advanced Computing Applications, Member of American Society of Civil Engineers (ASCE) Connected & Autonomous Vehicles Impacts Committee, Co-Chair of the IEEE ITS Society Technical Committee on Smart Mobility and Transportation 5.0.