

Team 7 Clean Consulting Rose Bowl Guidebook:

Executive Summary

The 2028 Olympics Games are slated to be held in Los Angeles, California. The city plans to employ a plan to to be the first “Energy Positive Games” ([Olympic Games](#)). One of the key venues for the Olympic Games is the Rose Bowl Stadium, which can host over 90,000 people ([Rose Bowl](#)). Hundreds of thousands of people are expected to descend in LA to watch the games, putting a strain on LA's transportation infrastructure ([NBC, 2024](#)). The United States Green Building Council (USGBC) has collaborated with Clean Consulting to offer students an opportunity to craft sustainable solutions for the city to implement prior to the games.

This guidebook is meant to provide a specific outline of our proposal for the city of LA and Pasadena to implement. Our proposal includes three main components: 1) investing in LA Metro bus infrastructure changes, 2) revamping bike infrastructure in Pasadena and 3) launching a transportation app. These changes will set LA up to welcome onlookers for the Olympic Games and create a lasting impact on the city's future.

Introduction and Context

LA is pursuing strategies that prioritize sustainability for the Olympic Games. The city hopes that the Games will act as a catalyst for lasting sustainability changes in the region, including improvements to transportation infrastructure and the energy grid ([Olympic Games](#)). LA plans to be the first “Energy Positive Games” by generating more energy through renewable sources than needed to fuel the games ([Olympic Games](#)). Reaching their aggressive sustainability goals requires building out infrastructure. Currently, LA Metro is working on completing 28 transportation projects within the next three years to support the influx of attendees. These projects include expansions of the underground metro lines, electrifying bus fleets, bus corridors, and mobility hubs ([LA Metro](#)). These projects only address the tip of the iceberg; there is still room for more sustainable solutions.

Audit of Rose Bowl Venue

The Rose Bowl Stadium will be the host site for the LA28 Olympic Games soccer matches ([Olympic Games](#)). The stadium can host approximately 90,000 people. Using the Paris Olympic soccer games as a benchmark to estimate the expected demand for Rose Bowl attendance, we estimate that approximately 25,000 people will attend each men's soccer match and 15,000 people will attend each women's soccer match ([Wikipedia](#)). For the entire duration of the Olympic Games, we can expect **nearly 1.2 million attendees** to traverse to the Rose Bowl.

Currently, there is limited transit access to and from the Rose Bowl. The nearest LA Metro station is the Del Mar Station, which services the Metro Gold Line and is 2.5 miles away from the Rose Bowl ([LA Metro](#)). There are no direct transportation options between the Del Mar Station and the Rose Bowl, resulting in an overreliance on private cars and rideshare services to complete first and last mile journeys. While there are bike and walking paths across Pasadena, including at the Rose Bowl, their connections to the Metro station are nearly non-existent. Expanding these connections will be critical to ensuring LA28 attendees utilize zero-emission public transportation options.

Metro Bus Infrastructure Changes: Bus Rapid Transit (BRT) Center-Running Lanes

The first set of LA Metro bus infrastructure changes worth investing in are Bus Rapid Transit (BRT) center-running lanes along Highway 405 and Freeway 134 to expand the 761 and 501 bus lines. These BRT lanes would be modeled off of a similar project in San Diego called the SANDAG I-15 Rapid Transit Corridor, which built BRT lanes along the I-15 to reduce congestion and carbon emissions ([SANDAG](#)). The SANDAG project also included transportation corridors to onboard passengers at various stops and allow buses to bypass car traffic. In LA, these BRT lanes would extend from LAX to Westwood to the Rose Bowl, providing quick transit for tourists and athletes alike. The BRT lines would be approximately 35 miles long, split across the 405 and 134. We would also construct transportation corridors at major transit points, including LAX, Westwood, and the Rose Bowl.

Using SANDAG's I-15 Rapid Transit Corridor budget proposals and LA Metro's BRT estimates, we estimate this expansion to cost roughly \$787.5 million. A 7 miles section of the SANDAG project — which stretched between the I-8 and I-94 — was budgeted for \$65 million, which is under \$10 million per mile. This budget projection falls in line with LA Metro's Low Range Estimate for building BRT lanes and transportation corridors ([Times of San Diego](#); [TransNet](#); [LA Metro](#)). LA Metro also has a Medium Range Estimate for BRT lanes which means "At least 50% of route has a dedicated running way; no or minimal right-of-way acquisition, no grade-separation," ([LA Metro](#)). This is estimated to be \$25 million per mile. Using this estimate, the Olympic BRT expansion would cost \$875 million. Using these two estimates, we expect the Olympic BRT expansion to cost \$787.5 million.

We estimate that the greenhouse gas emissions from the construction of the rapid transit corridors and improvements to rapid transit lanes will total around 25,601.1 tons.

According to the [China Academy of Transportation Science](#), CO₂ emissions from studied expressway construction is estimated at 17,067.4 tons mile⁻¹·lane⁻¹ with material production accounting for the major component (95.2%) and the on-site construction phase having a minor component (4.8%). The proposed construction project includes three 0.25 mile long corridors with two lanes per each (one in each direction of the freeway). Using the CO₂ emission estimate and these numbers, the total greenhouse gasses emitted by this project would be 5,601.1 tons.

Beyond drafting the project proposal, the preliminary next steps to implement this expansion would include: 1) applying for federal/state grants, 2) engineering assessments for transportation corridors, and 3) starting a pilot program.

There are a variety of federal and state grants that fund transportation projects similar to the Olympic BRT expansion. The **Federal Transportation Association's Capital Investment Grant Program** is designed for major transportation projects like light rail and BRT. LA Metro has used this grant funding before for the Purple Line Expansion ([FTA](#); [FTA](#)). This grant provided LA Metro with \$3.59 million to expand the Purple Line ([FTA](#)). The **Rebuilding American Infrastructure with Sustainability and Equity Grants (RAISE)** is a federal grant offered to above ground transportation projects ([RAISE](#)). These grants are granted to programs that improve environmental sustainability and community connectivity, which the Olympic BRT expansion could propose itself as. The **Congestion Mitigation and Air Quality (CMAQ)** Improvement Plan is a federal grant used for projects that reduce emissions, improve air quality, and relieve congestion. The Olympic BRT expansion would easily qualify for the CMAQ. The **Solutions for Congested Corridors Program (SCCP)** is a California state grant that funds projects like BRT and multi-corridor improvements ([SCCP](#)). These grants are merely a few recommendations for funding — there are many more pathways to explore. There have been many transportation projects in Southern California which have cost well-over \$800 million, including the San Fernando Valley light rail expansion and the Foothill Gold Line Expansion ([LA Metro](#); [LA Business Times](#)). These projects give us confidence that at the federal and state level, acquiring funding for the Olympic BRT expansion is feasible.

After securing initial funding and outlining the project proposal, the next critical phase for the Olympic BRT expansion involves conducting in-depth technical assessments and launching small-scale pilots to guide full-scale implementation. These early actions are necessary to identify infrastructure needs and ensure the implemented model aligns with transportation goals.

1. Conduct Engineering Assessments and Transportation Modeling

The first step is to conduct detailed assessments for both the 405 and 134 corridors. These assessments will:

- Evaluate existing roadway conditions and capacity
- Identify potential obstacles to center-running BRT lanes
- Model traffic impacts for both general traffic and dedicated transit lanes
- Analyze future ridership demand for the LA Olympics and afterwards

2. Refine Cost Estimates

The initial estimates are based on previous BRT projects and projections. More detailed cost modeling will be required once engineering data is available. This includes:

- Identifying sections that may require minor right-of-way acquisitions or modifications
- Accessing any utility relocation needs (should not be extensive if main goal is repainting highways)

3. Launch a BRT Pilot Program on Select Corridors

To test real-world impacts, a pilot program should be implemented on select sections of the 405 and 134. The pilot would include:

- Converting existing general lanes to temporary center-running bus-only lanes
- Installing temporary passenger loading zones and signage
- Monitoring travel time improvements at peak and off hours

The combination of these improvement plans will set LA Metro up to swiftly transfer large swaths of people from key locations, including to and from the Rose Bowl. These transportation solutions, however, can be used after the Olympics as well. These bus lanes will commuters from across LA to Pasadena, ensuring that they have an alternative transportation source. Furthermore, this expansion connects the UCLA community directly to their football stadium, enabling the UCLA community to more easily reach football games in the fall.

Metro Bus Infrastructure Changes: Electrifying LA Metro Bus Fleet

The next set of LA Metro bus infrastructure changes would include expanding the electric bus fleet used for bus lines 761 and 501. LA Metro already has projects to electrify parts of their bus fleet; this would merely extend that project to connect West LA with Downtown Pasadena and the Rose Bowl. It seems unlikely to completely electrify LA Metro's bus lines by 2028, but expanding the fleet by 100 high-capacity, electric buses is one step towards that goal. We recommend expanding the electric bus fleet by 100 high-capacity buses to shuttle tourists, athletes, and other onlookers to and from major transportation hubs like LAX, Westwood, and the Rose Bowl. LA must ensure these buses have dual-side doors and are ADA accessible so they can be used for future transportation needs.

The 100-bus expansion is projected to cost \$72 million dollars. The cost of one BYD electric bus in California is \$720,000 ([California Energy Commission](#)). While the cost of a compressed natural gas bus is \$525,133, in 8 years, the estimated savings in operating costs for an electric bus will pay back the difference ([California Energy Commission](#)). Additionally, the investment in zero-emissions infrastructure aligns with the city of LA's sustainability goals beyond the Olympic Games, making this a worthy investment. In 2024, LA Metro secured \$77.5 million dollars in federal funding to electrify the bus fleet ([Metro LA](#)). This funding is meant to purchase electric buses and build new charging infrastructure, meaning our proposed expansion would require securing more funding to purchase additional buses and charging infrastructure.

The preliminary next steps to carry out the electrification of the LA Metro bus fleet have three components: 1) applying for federal and state funding, 2) coordinating with BYD and bus manufacturers to ensure that buses comply with requirements, and 3) charging infrastructure planning.

There are a variety of federal and state grants that LA Metro can apply for to expand its electric bus fleet. The **FTA Low or No Emission Grant Program** is specifically for state and local governments to purchase low or no-emissions transportation vehicles ([FTA](#)). This grant has allotted funding for a wide range of transportation projects, distributing \$1.5 billion to

transportation authorities across the country ([FTA](#)). This grant could provide multi-million dollars of funding for this project. The **RAISE Grant** can also be applied for this project, which grants up to \$25 million to urban and rural areas across the country ([RAISE](#)). These grants tend to be higher for urban areas, which indicates that LA could receive \$25 million for this electrification project.

After securing initial funding and outlining the project proposal, the next critical phase for electrifying the LA Metro's bus fleet involves coordinating closely with industry partners to ensure infrastructure standard compliance and planning out charging infrastructure.

1. Coordinate with Bus Manufacturers and Procurement Teams

Before any purchase is made, LA Metro must work closely with electric bus manufacturers like BYD to ensure that all vehicle models meet system-wide operational standards. This includes:

- Dual-side doors to ensure flexible usage for curbside and center-running lanes
- Compliance with ADA standards to ensure universal accessibility
- High-capacity vehicle transfiguration to accommodate the high-volume of travels during Olympics
- Compatibility with LA's charging infrastructure and management tools

2. Plan and Design Charging Infrastructure

The deployment of 100 electric buses will require upgrades to LA Metro's charging capacity at key depots, and would potentially require expansion of charging depots across Olympic-related transportation hubs, like the Rose Bowl. The charging infrastructure plans should:

- Identify which bus depots would house the Olympic fleet near LAX, Westwood, and the Rose Bowl
- Select the appropriate charging model
- Coordinate with LADWP and Southern California Edison to ensure electric grid capacity
- Include future-proofing methods to ensure these systems can be used in the long-term or modified for future use

Emissions Analysis of Electric Bus Production

Manufacturing an electric bus typically emits 60 -100 metric tons of CO₂ per bus, the majority of which comes from the creation of batteries. Therefore **the production of the proposed 100 bus fleet would emit 6,000 - 10,000 metric tons of CO₂**. While this is a large amount of greenhouse gases, it is not substantial when compared to the potential these buses have to reduce single occupancy vehicle usage CO₂ emissions.

Emissions Analysis of Electric Bus Deployment During the Olympic Games and Long-Term Operations

1. Operational Assumptions

- Bus Configuration: Each electric bus has a total capacity of 84 passengers (40 seated, 44 standing).
- Average Load Factor: During the Olympic Games, buses are assumed to operate at 80% capacity (~67 passengers per trip).
- Vehicle Displacement: With an average car occupancy of 1.5 passengers ([National Household Travel Survey](#)), one bus displaces approximately 45 cars.
- GHG Emissions Rates:
 - Average gasoline-powered car: 400 grams CO₂ per mile ([Environmental Protection Agency](#)).
 - Electric bus powered by U.S. energy mix: 1,078 grams CO₂ per mile.
- Trip Duration: A typical round-trip from LAX to the Rose Bowl takes approximately 50 minutes (35 minutes driving, 15 minutes dwell/loading time).
- Daily Operating Hours: Buses will operate from 7:00 AM to 10:00 PM (15 hours/day).
- Trips per Bus per Day: Approximately 18 round-trips/day.
- Olympic Period Duration: 30 days.
- Fleet Size: 100 electric buses.

2. Emissions Reduction Calculations

- Per Mile Emissions Savings
 - GHG emissions from displaced vehicles:
400g CO₂/mile × 45 cars = 18,000g CO₂/mile
 - Net GHG savings per mile from electric bus use:
18000 – 1,078 = 16,922g CO₂/mile
- Daily Trip Metrics
 - Trips per bus per day: 18
 - Distance per trip: 35 miles
 - Total daily miles per bus: 18×35=630 miles
 - Total GHG Reduction During Olympics
- 3. **Total GHG savings:** 630 miles/day/bus × 16,922g CO₂/mile × 30 days × 100 buses

Result:

Based on these assumptions and calculations, it is estimated that about **31,982,580 kilograms of CO₂ emissions, or about 31,982.6 metric tons of CO₂ emissions, would be prevented during the Olympic Games** with the implementation of improved rapid transit and a new electric bus fleet.

Long-Term Emissions Reduction Potential

We estimate that the new electric bus fleet and improved rapid transit route will **reduce annual GHG emissions by 119,935 – 239,870 metric tons CO₂ per year**. Assuming year-round operation at a more modest average capacity of 25–50%, electric buses would continue to displace conventional car travel and contribute to GHG reductions on a larger scale. This

long-term scenario assumes similar route distances and operational parameters scaled over a full calendar year and reflects varying passenger loads.

Transitioning Olympic infrastructure to long-term public transit assets can ensure continued environmental returns well beyond the event itself. From these statistics it is clear that these improvements to Los Angeles's Transit will have a lasting and high impact on GHG reductions. Despite reliance on the U.S. average energy mix, electric buses offer substantial net benefits compared to single-occupancy gasoline vehicles.

Revamping Bike Lanes in Pasadena and Establishing an Electric Bike Fleet

Upgrading Pre-Existing Bike Lanes

- **Protected Bike Lanes:** Implementing physically separated bike lanes on major corridors such as Colorado Boulevard, Rosemont Avenue, and areas surrounding the Rose Bowl.
- **Pop-Up Lanes:** Establishing temporary bike lanes during peak Olympic events to accommodate increased cyclist volumes.
- **Bike Parking and Rentals:** Installing secure bike racks and collaborating with bike-sharing programs to provide convenient rental options.
- **Integration with Public Transit:** Ensuring seamless connections between bike lanes and public transportation hubs to facilitate multimodal commuting.

Establish E-Bike Rental Stations

- **Locations:** Strategically place stations at the Rose Bowl, Memorial Park, Old Pasadena, and near Metro Gold Line stations. [Home | City of Los Angeles](#)
- **Fleet:** Deploy a fleet of electric bikes equipped with GPS and user-friendly interfaces.
- **Access:** Integrate with existing transit systems, allowing seamless transfers between bikes and public transportation.

Specific Improvement Projects in the Works:

- Union street protected bikeway, 1.5 miles, \$7.685 million, protected lanes, signal modifications
- Cordova Street Improvements, 1.5 mile, \$2.7 million, road diet, curb extensions, crosswalk upgrades
- Greenway Corridors (each), varies mileage, \$1.42-3.97 million, traffic calming, signage, intersection upgrades.

Calculations Breakdown For Revamping Pre-Existing Bike Lanes

In Paris the city invested €250 million (approximately \$270 million USD) in cycling infrastructure between 2021 and 2026, and Pasadena could consider a scaled approach. For an **Initial Investment** they could approximate **\$10–15 million** for planning, design, and pilot projects. To Revamp and add in new **Buffered Bike Lanes** they should expect to spend about **\$30,000 per mile**. To create **Protected Bike Lanes** the cost will range from **\$100,000 to \$1 million per mile**, depending on design complexity and materials used. To create **Raised Cycle Tracks**, **Pasadena** should plan for a cost of **\$1- \$2.3 million per mile**, especially in urban areas requiring significant modifications. For a **full Implementation** they should estimate **~\$50 million**

to develop a comprehensive network of bike lanes, including infrastructure and amenities.
[Breaking-down-caltrans-cost-estimate-of-the-complete-streets-bill](#) [the-true-cost-of-bike-lanes](#)

Calculations Breakdown for Establishing E-bike Rental Facilities

E-Bike Rental Stations (10-15) : **\$500,000 – \$750,000**

Industry standards suggest that establishing a bike rental station can range from \$50,000 to \$150,000, including docking stations and necessary infrastructure. These would be **sustainable**, utilizing solar-powered charging stations and promoting the use of renewable energy sources. To establish an electric bike fleet suitable for the city of Pasadena, the city should consider purchasing about **300–500** bikes. This would be a reasonable starting point that can be adjusted based on initial experiments and would cost around **\$1.5-\$2.5 million**. Mobility Hubs are essential for establishing usable bike routes. The amount needed for a city like Pasadena would be about 5 locations, costing roughly **\$500,000 to \$2 million per hub**. These costs encompass infrastructure development, technology integration, seating, and shelter.
[2021-06-14_att_nexus-study.pdf](#)

Total Costs: \$3-\$5 million

Solar Charging Stations vs. Grid-Powered Charging Stations — Choose Solar Powered Charging Stations

Solar-Powered Charging Stations

- **Installation Costs:** Solar-powered e-bike charging stations typically range from **\$15,000 to \$25,000** per unit, depending on capacity and design. [DatafieldUSA](#)
- **Operational Costs:** Once installed, these stations have minimal operating costs, mainly related to maintenance and occasional battery replacements.

They harness renewable energy, reducing carbon emissions and aligning with sustainability goals.

Grid-Powered Charging Stations

- **Installation Costs:** Commercial Level 2 charging stations can cost between **\$2,000 and \$5,000**, including installation. [EV CHARGER SERVICES](#)
- **Operational Costs:** Ongoing electricity costs depend on local rates; for instance, California's average residential electricity rate is about **\$0.25 per kWh**.

Could charge for revenue: \$0.20 per minute or \$8 for a day rental (based on similar prices across the US for e-bike rentals) Income from a moderate usage scenario: 2 Rides per Day, 30 Minutes Each:

- Per ride: 30 min × \$0.20 = \$6 - Per bike per day: \$6 × 2 = \$12
- Total per day: \$12 × 400 = \$4,800
- **Total (30 days): \$4,800 × 30 = \$144,000**

Pasadena could reasonably expect around \$144,000 in direct rental revenue during the Olympics with a 400-bike fleet at \$0.20/min or \$8/day pricing. This doesn't include revenue from advertising, sponsorships, or partnerships, which could significantly boost total income.

Post Olympics: Pasadena could expect **~\$1M/year in revenue**, depending on usage, pricing strategy, and supplemental income (advertising, grants). With solid infrastructure and promotion, it can transition into a self-sustaining system with long-term environmental and economic benefits.

High Revenue Estimate: 70% per-minute, 30% day passes

- **Per-minute:**
 $0.9 \text{ rides/day} \times 25 \text{ min} \times \$0.20 = \$4.50/\text{bike}$
 $\$4.50 \times 400 = \$1,800/\text{day} \rightarrow \textbf{\$657,000/year}$
- **Day-pass:**
 $0.6 \text{ rides/day} \times \$8 = \$4.80/\text{bike}$
 $\$4.80 \times 400 = \$1,920/\text{day} \rightarrow \textbf{\$700,800/year}$ (adjusted for fewer weekends/peak days)
- **Combined:**
 $\sim \$1,800 + \$1,920 = \$3,720/\text{day}$
 Annual: $\sim \$3,720 \times 365 = \textbf{\$1.36 million/year}$

Additional Revenue: Advertising on bikes/docks: \$40,000–\$120,000 & Sponsorships: \$50,000–\$200,000 annually

Strategic Recommendations

Pasadena could begin by experimenting with **Pilot Projects**. Launching temporary bike lanes during major events to gauge public response and refine designs. **Partnerships** could also benefit the city in their goals, by collaborating with local businesses and organizations to support and promote cycling initiatives.

Impact on LA28 and Long-Term Sustainability

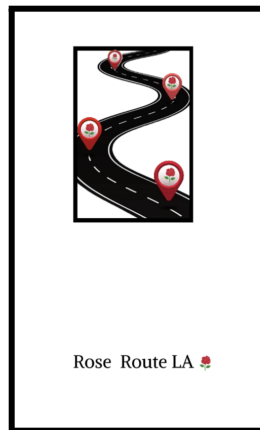
Environmental and Health Impacts

- **Emissions Reduction:** Expanding cycling infrastructure can reduce greenhouse gas emissions from transportation by up to 25% .
- **Health Benefits:** Increased cycling can lead to improved public health outcomes by promoting physical activity and reducing air pollution.
- **Behavioral Shifts:** Cities like Paris have seen a shift from car usage to cycling, with over 11% of trips now made by bike. [howparis2024.ispedallingtowardsagreenerfuture](https://www.paris2024.org/en/press-releases/how-paris-2024-is-peddalling-towards-a-greener-future)

Legacy and Community Engagement

Designing infrastructure to be adaptable for post-Olympic use, ensuring long-term benefits for residents through **community involvement and educational programs**. Engaging local communities in the planning process to address specific needs and preferences and implement cycling education and safety programs to encourage widespread adoption.

RoseRoute LA: Transportation App



Name of App: Road Route LA

Main Issues: Being more organized, and finding ways for people to efficiently arrive at the rose bowl. People spend too much time all over the web figuring out how to get to the Rose Bowl. Most of the time people don't know how many options there are to get to the Rose Bowl. I've experienced not knowing what options there were when visiting the Rose Bowl.

Goal: Finding an efficient way for attendees to arrive at the Rose Bowl. There are many ways people are able to find this information out but at the end of day if people don't have access to it, all in one place many people are not gonna go out of their way to research. With that being the ideology behind it all, what would be the point of building all these new transportation systems if nobody knows about them? Making this app will give access to all attendees attending the Olympics and fute redness for other events at the Rose Bowl to all the types of transportation and which option would be best for them. The main goal is for it to be user-friendly, and for it to actually work, and allow for it to save energy, time and money.

Features:

- A Splash Screen will be displayed as soon as you open the app with a logo
- There will be a main menu with options like (Trip Planner, Nearby Spots, Favorites)
- There will be a GPS tracker implemented, to track your location
- It will then tell you the best way to get there considering time, energy, and money
- There will also be a cost breakdown, showing which options is the cheapest at well
- Trip Planner will allow to specific pinpoint where you will be at during the day, and decide what would be the best transportation source during your trip
- There will also be feature in route that allows for you to pick the destination your at specifically like the hotel you staying at weather tts near Pasadena, Westwood, or LAX

Advantages:

- Cheapest investment
- Great way to find information all in one place
- Can be used for future Rose Bowl Events

- No other app like this exist, and would be the first
- Will keep everything more organized, causing better experiences for future attendees at the Rose Bowl

Cost Breakdown:

Freelancers (Small App):

\$15,000 - \$40,000

Small Agency (Mid Level):

\$40,000 - \$100,000

High-end Agency (Full App):

\$100,000 - \$250,000

Ways to reduce cost:

- Starting off with just IOS or Android
- Partnering with Google Maps, or other similar companies
- Not using a login feature, if not needed, making it a simple app at first
- Focusing on the most important feature like the GPS feature

Integration

Used together, these three components will enable tourists and commuters alike to utilize sustainable transportation methods to swiftly reach target destinations like the Rose Bowl Stadium. Across the sixteen days of the LA28 Olympics, these transportation solutions will help transport a significant portion of the 1.2 million attendees expected to watch soccer matches at the Rose Bowl. Commuters from LAX and Westwood Village can utilize the rapid service electric buses; Pasadena locals and tourists staying in the Pasadena area can use protected bike paths and electric bicycles to travel to-and-from the Rose Bowl. Tourists using the LA Metro Gold Line can hop on electric bikes docked at stations near the Rose Bowl to watch the match.

All their travel plans can be planned using Rose Route LA, which provides cost and time estimates for different transportation methods.

In the long-term, these transportation infrastructure changes can be used to reduce LA's reliance on private vehicles. By expanding BRT lanes across the 405 and 134, commuters are incentivized to use state of the art public transportation instead of sitting in their own cars.

Improving the bicycle infrastructure in Pasadena will encourage bicycle usage across the city. After the Olympic Games in Paris, 11% of trips that would traditionally be made with cars were

made with bikes instead. A similar future could be seen in Pasadena with these infrastructure changes.

Conclusion

We recommend the LA28 Olympics Planning Committee work with the city of LA and Pasadena to implement three key infrastructure changes:

- Implementing 35 miles of Bus Rapid Transit (BRT) center-running lanes along Highway 405 and Freeway 134
- Permanently expanding the LA Metro bus fleet by 100 electric buses
- Revamping existing bicycle infrastructure in Pasadena to support an influx of riders, including investing in E-bike rental stations

These transportation solutions will be easily navigated using the Rose Route LA app, providing riders with straight-forward information to guide their transportation planning.

By implementing these changes, the LA28 Olympics will be significantly closer to achieving its goal to be the first “Energy Positive Games” — setting a bar for future Olympic hosts to be as sustainable as possible.

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