

# Challenge Statement

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Client-Partner: Pasadena Region



## How might we deploy access to EV charging across Pasadena?

### **The small bet:**

future-cast and system-map green mobility for Pasadena with prototype design for a mobility hub.

### **County Goal:**

#8, A convenient, safe, clean and affordable transportation system that enhances mobility and quality of life while reducing car dependency. The system will employ environmentally responsible operational and maintenance practices.

### **Client Partner:**

Pasadena regional stakeholders.

### **Background and Need:**

To meet the County's emission goals, the City of Pasadena has determined that it must engage its residents and encourage participation in EV ride shares; EV hub stations connected to public transportation; incentives for companies to utilize EV trucks and carriers; and the creation of an effective EV hub within the city limits.

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But in order to design electrification infrastructure and a mobility hub for Pasadena, which would reasonably be expected to be in service for several decades, it is necessary to understand what mobility will look like over the next few decades.

For Pasadena, all transportation modes (such as light rail, buses, cars, TNCs, micro-mobility, cycling, walking, flying taxis, package delivery, retail delivery, etc.) will be influenced by national/international trends and local political decisions while underpinned by technology developments.

Mobility for Pasadena will comprise local mobility within Pasadena and areas immediately adjacent as well as connections with the greater region. The future of mobility for Pasadena will also inextricably be linked with the design of Pasadena's streets and infrastructure.

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In the end, understanding transportation and mobility assets will take into account how Pasadena would really like its city to function, what is achievable through public/private partnerships and in particular, the application of the three Sustainability Pillars:

- **Economy:** fair, affordable pricing for multiple stakeholders, including individual residents, car sharing companies, and fleet vehicles;
- **Society:** accessible, reliable, easy-to-use charging, and effective communication to inform all stakeholders;
- **Environment:** energy sourcing to meet carbon emission timeline for the County and State, and environmentally responsible operational and maintenance practices.

## Location:

The City of Pasadena

## The Challenge:

Future-cast and system-map green mobility for the City of Pasadena with prototype design for a shared mobility hub. Specifically, the challenge includes:

- A full future-cast for each of the modes of transportation/mobility that would fit into the City of Pasadena's next Master Plan;
- System mapping of how these modes will interact with each other locally and with macro-systems outside of Pasadena's jurisdiction;

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- Prototype design exploring where a mobility hub (or hubs) should be located, how they need to function and what sort of electrification infrastructure Pasadena must plan for.

The hub must engage the residents in EV alternatives and encourages the participation of transient delivery and commercial vehicles. Location, design and ease of use are all critical components.

To address the challenge, teams will use the same brief and will coordinate with each other and contribute their particular part of an overall system design.

Submissions will propose solutions using one or more of the following components: community engagement; best use; and infrastructure design. Teams may focus on the challenge from a range of departmental or other perspectives, including financial models to assess viability; technical analysis of existing and future EV systems; design, including accessibility and ergonomics; user experience; and communication strategies.

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The colleges will use the same design brief, and will coordinate with each other and contribute their particular part to an overall system outcome. Possible areas include but are not limited to:

- financial models to support energy use and cost structures for shared mobility companies;
- system overview of current and future EV charging capability;
- hub configuration and design, including accessibility, ergonomics, and user experience;
- information and communication strategy including digital applications;
- user research to inform overall system solutions,
- add more.

A shared mobility hub for electric vehicle drivers may appeal to shared mobility companies such as Uber and Lyft. DC Fast Charging Facilities would be made available to shared mobility companies through either a subscription model, or discounted EV charging for their drivers. A methodology would be developed to assure that chargers are available when needed through either dedicated chargers (with a guaranteed minimum usage) or an app based priority system. An alternative proposal could be made for electric delivery vans for companies like Amazon, FedEx, UPS, and the USPS.

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## **Additional information:**

Car sharing companies such as Uber and Lyft are trying to develop their “green fleet” programs. Several attempts though start-ups Evercar and Maven were heavy users of public DC Fast Charging facilities when they were operational. Readily available DC Fast Charging infrastructure is typically the challenge for these initiatives. Additionally, Amazon purchased 100,000 Rivian Vans for their delivery trucks.

PWP has the Marengo Garage EV Charging Plaza with 44 DC Fast Chargers (24 Tesla and 20 PWP Universal) covering all three charging standards. In June, 2021, PWP will have operational the Arroyo Parkway Charging Depot with 26 DC Fast Chargers (20 Tesla V3 and 6 PWP Universal chargers). This facility has higher capacity Tesla V3-250-kW chargers and PWP’s 175-kW chargers which can accommodate larger vehicles such as Cybretrucks, Rivian, Hummers, and Delivery Vans. It will be capable of adding 10 more 150-kW chargers. Additional EV facilities are being built at Victory Park, Robinson Park and the Metro Del Mar Transit Center which included both DC Fast Charging and level 2 chargers. PWP would entertain a subscription model for participants for the project.

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Pasadena DOT would encourage participation to the program through their channels. PWP would also work with DOT for smooth access to the Marengo Plaza for participants. DOT would also investigate providing magnetic decals with the program logo for the participating vehicles.

More information, deliverables, and assessment criteria: see Pando Days '21 webpage.

<https://pandopopulus.com/programs/pando-days-21/>

