



**City of Corona
Department of Water and Power**

**FINAL REPORT
AB 2766 Discretionary Fund**

**Bicycle Infrastructure and
Electric Vehicle Charging Infrastructure
Contract Number ML14019**

March 6, 2018

Prepared for Mobile Source Air Pollution Review Committee (MSRC) under the
AB 2766 Discretionary Fund Work Program.

Acknowledgements

Mobile Source Air Pollution Review Committee (MSRC)

South Coast Air Quality Management District (SCAQMD)

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This report was submitted in fulfillment of Contract Number ML14019 and Electric Vehicle Infrastructure/Bicycle Infrastructure by the City of Corona Department of Water and Power under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of January 7, 2018.

Disclaimer

The statements and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction Review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses, in connection with material reported, is not to be construed as either an actual or implied endorsement of such products.

With the assistance of generous funding from the MSRC, the City of Corona Department of Water and Power was able to complete two projects that align with Corona's dedication to supporting clean air policies and infrastructure that fosters reduced greenhouse gas emissions: 1) Bicycle Infrastructure and 2) Electrical Vehicle (EV) Charging Infrastructure.

1. Bicycle Infrastructure

The City employed its own staff to install 43 loop-style, heavy-duty bike racks at 35 parks and public facilities throughout the City. Each bike rack holds seven (7) bikes, for a total of 301 bike spaces made available for Corona citizens. The City also installed 20 heavy-duty bicycle lockers, anchored in groups of two (2) or four (4), to cement slabs at City Hall, the Corona Police Station, the City's Corporation Yard, Santana Park, and the City's Community Center, for commuting and recreational bicyclists.

City staff performed all required tasks to complete installation of the bike racks and lockers, including:

- Obtaining all required permits for the work and follow-up maintenance, including building, electrical, planning and ADA compliance permits;
- Determining who would perform the installation work;
- Comparing costs from suppliers of bicycle racks and bicycle lockers, and purchasing the necessary equipment and materials;
- Ensuring installation locations were suitable and approving site design;
- Performing site work such as clearing the sites and pouring concrete as necessary;
- Ensuring safety measures were in place and equipment was ADA compliant, as necessary; and
- Making follow up site visits to ensure that all construction tasks were completed according to the plans.

This bicycle infrastructure project aligned with the City of Corona Bicycle Master Plan, which recommends the installation of two types of bicycle parking facilities: 1) Class I – facilities that accommodate people expected to park more than two hours, generally consisting of heavy-duty bike lockers or bike corrals, and 2) Class II – facilities that accommodate people expected to depart within two hours, generally consisting of bicycle racks that provide support and are anchored to the ground, so that bicyclists can use their own portable bicycle locking mechanisms.

The City applied for MSRC funding to address its need for additional bicycle infrastructure throughout the City, and to complement other efforts to encourage use of clean, alternative modes of transportation.

The new racks and lockers will provide security and protection for residents who wish to use their bicycles for transportation rather than their vehicles, the benefits of which are reduced greenhouse gas emissions and traffic congestion in the City.

2. EV Charging Stations

The City selected and contracted with experienced vendors to procure and install eight (8) new electric vehicle charging stations at the following four (4) central locations throughout the City:

- 1) Corona Pointe: Three (3) ChargePoint CT4000 Level II chargers
- 2) The Shops at Dos Lagos: Three (3) ChargePoint CT4000 Level II chargers
- 3) City Hall: One (1) ChargePoint CPE200 Express/Level III charger
- 4) Corporation Yard: One (1) ChargePoint CPE200 Express/Level III charger

City staff and its vendors, with the help of Southern California Edison, performed all tasks required to complete installation of the stations, including:

- Obtaining all required permits for the work and follow-up maintenance, including building, electrical, planning and ADA compliance permits;
- Ensuring site design was specific to charger hardware and met necessary codes;
- Evaluating sufficient capacity from the existing electrical system, meter location, completing site work, and installing meters and other necessary hardware;
- Ensuring proper safety and ADA compliance measures were in place;
- Training staff on charging station operation;
- Repairing landscaping following station installation;
- Inspecting and maintaining charging station sites; and
- Completing public outreach activities to advertise and promote the new stations.

All the chargers are part of the ChargePoint network. By downloading the mobile app from ChargePoint's website, customers can 1) see which stations are available for charging, 2) start charging by holding the phone up to the card reader at the station, 3) receive notifications when the car is finished charging or when a station becomes available, 4) schedule charging, set reminders, get notifications and track usage, and 5) alert ChargePoint when issues are encountered.

Installation of the new charging stations aligns with the City's dedication to air quality improvement and commitment to the development of alternative fuel sources infrastructure. The City's Alternative Fuel Rebate Program provided \$2,000 for Corona residents who bought new qualified alternative fuel vehicles (or \$1,000 to residents who bought qualified used vehicles). The program, which was funded in part by the South Coast Air Quality Management District, dispersed all funds available to Corona citizens. The City rewarded citizens for purchasing electric vehicles and has now provided easily accessible charging stations for those

vehicles. All the new stations are publicly accessible and available 24 hours a day, and the chargers at Corona Pointe and The Shops at Dos Lagos each have one ADA accessible parking stall.

Problems Encountered

The City did not experience significant issues with the installation of the bike racks and lockers. Once the racks and lockers were received from the vendor, City staff worked to complete all installations in a timely manner. There were issues at a couple of locations where bike lockers were installed, which included vandalism as well as concerns over public safety, so the City debated moving them. The City contacted the SQAMD and was told that this would be acceptable if prior approval was obtained. However, the City was able to resolve the issues and ultimately did not move the lockers in question.

Unanticipated delays were encountered with the installation of the charging stations, including staffing shortages in the City's Purchasing Department. The task of issuing the Request for Proposals for charging station installation at two of the four locations was delayed until November 2016, and a contract was not awarded until January 2017. After preliminary site work had been completed, the City's Building Department informed the project team that the Americans with Disabilities Act (ADA) requires one ADA space for every six EV charging spaces. To accommodate this requirement, the City needed to complete a striping design layout and issue a change order with the contractor to switch the locations of the current and future chargers (extra runs were installed at both Dos Lagos and Corona Pointe, so that in the future the City could expand and install additional EV stations).

The City also experienced delays with the work at the other two locations (City Hall and Corporation Yard). The City needed to complete the easement process with Southern California Edison (SCE) for the City Hall and Corporation Yard sites, a process that involved City Council approval and filing the easements with the County of Riverside. The task of providing design plans for setting the meter pedestals by SCE took longer than expected, partly due to staffing changes within SCE. SCE also had to complete final meter installation for the chargers at these locations, which could not be scheduled until a month following the release by the City of Corona Building Department.

Due to the delays, the City requested an extension from the MSRC to allow the City to fulfill its duties under the contract terms, including entering all stations into service, completing public outreach activities, submitting the Final Report, and complying with the five-year operational requirement. The City is grateful to the SQAMD/MSRC for granting the extension and enabling the City to fully complete this important project.

Emissions Benefits/Projections and Future Actions

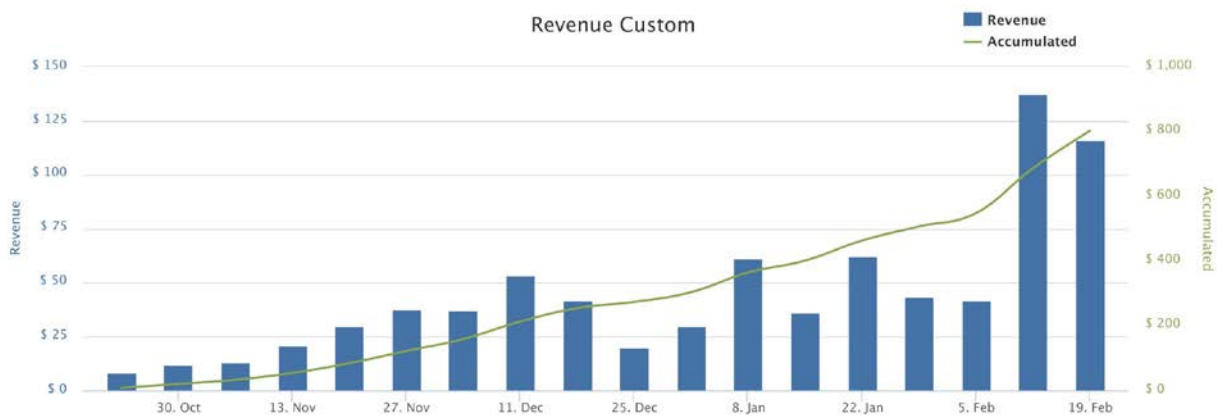
Replacing vehicle transportation with bicycle transportation is an effective way to limit reliance on fossil fuels and reduce greenhouse gas emissions. For a 10-mile round trip commute, five days per week, a mid-size car that gets 20 mpg uses 124 gallons of gasoline and emits approximately 1.3 tons of carbon dioxide. Bicycle commuting uses no fuel, produces no emissions and has the added benefit of reducing traffic congestion.

According to the Alliance for Biking & Walking, there has been a 65% increase in biking over the last 20 years. However, one deterrent to potential bike riders is the lack of safe, secure parking close to their destinations. The new bike racks and lockers installed through this project complement the pre-existing bicycle infrastructure throughout the City and will encourage an increased number of residents to commute to work and other destinations via bicycle. The City has 126.7 linear miles of bikeways, and an average of 139 bus riders per day utilize a bicycle. Although not measurable at this time (the City has not performed city-wide bicycle counts), the City anticipates that the number of daily bicycle riders will increase with the added bike parking infrastructure. It is not possible to accurately estimate how many people will choose biking over car driving due to the new bike racks and lockers, however the City can confidently say that filling the need for convenient, secure bike parking will not only encourage current riders to continue cycling but will also entice others, who currently choose vehicle driving as their main mode of transportation, to cycle instead. Thus, the new racks and lockers will effectively help to reduce harmful emissions and improve air quality, as well as ease traffic congestion.

It is widely known that electric vehicle use helps to reduce greenhouse gas emissions that contribute to poor air quality, which is linked to short and long-term human health problems. Electric vehicles are also quieter than conventionally-fueled vehicles, which means less noise pollution. Although the stations installed through this project have only been operational for a short period, in looking at the usage to date (see chart below) the City estimates a reduction of 500 kg of greenhouse gas (GHG) emissions per month, 6,000 kg per year, and 60,000 kg over the lifetime of the chargers. This significant reduction of harmful emissions will contribute to better air quality and improved health of Corona residents and aligns with the SCAQMD's Air Quality Management Plan aimed at attaining federal national ambient air quality standards.



While it is too early to make accurate projections, the City has seen positive revenues from use of the new charging stations, as shown below:



To inform future decisions regarding alternative fuel infrastructure, the City will perform market research on the rates it charges to ensure competitiveness. The City is also in the process of undergoing an electric rate study with the added component of evaluating the City's readiness for future anticipated electric vehicle use and its impacts to its electric system. The City of Corona is also a municipally owned electric utility, providing electricity to several distinct sections of the City. One of these areas, known as Dos Lagos, contains residential development. The City wants to encourage and be prepared for the proliferation of electric vehicles. As part of this process, the City will better understand and be able to set appropriate rates that both encourage electric vehicle use and provide for appropriate cost recovery.

Conclusion

The MSRC's continued generosity has strengthened the City of Corona's dedication to alternative fuel infrastructure and supported the existing environmentally conscious framework

set forth by the City Council and Corona's citizens. In completing this project, City staff had the forethought while working to install extra runs at both Dos Lagos and Corona Pointe to allow for expansion of the charging station infrastructure at these two centrally-located sites. The City will monitor current station usage to determine if/when those additional stations are needed. Future reductions in greenhouse gas emissions, traffic congestion and noise pollution are expected through economies of scale from expansion of infrastructure that facilitates use of alternative fuel and active modes of transportation.

Photographs and Public Outreach

The City completed the following public outreach activities:

- Posted *Inner Circle News* e-newsletter article titled "Coming Soon: Electric Vehicle Charging Stations & Bike Racks, Lockers!" in June 2016 (*see pages 7-8 of this report*).
- Posted *Inner Circle News* e-newsletter article titled "New Electric Vehicle Charging Stations Installed with Grant Funds" in January 2018:
<https://www.coronaca.gov/Home/Components/News/News/2461/17> (*see page 9 of this report*).
- Worked with The Shops at Dos Lagos to advertise the installation of the new charging stations through Facebook (*see screen shot on page 10 of this report*).
- Added information about the new stations to the City's mobile application, including maps to locations (*see screen shots on pages 11-14 of this report*).
- Added a link on the City's website (Services/EV Charging Stations) to the station locations on Google Maps:
<https://www.google.com/maps/search/electric+vehicle+charging+station/@33.8491426,-117.5824535,13.32z?hl=en>.
- The City has, and continues to, bring its own electric vehicle, a Nissan Leaf, to many public outreach events, including its annual Garden Festival, to educate the public and encourage electric vehicle use.



Coming Soon: Electric Vehicle Charging Stations & Bike Racks, Lockers!

Posted on June 20, 2016 by CityofCorona

Do you want to ride your bike more, but don't have a place to secure it? Have an electric vehicle that needs a quick charge while you're on the road? We've got some good news for you! The City of Corona received grant funding to install bicycle racks and electric vehicle (EV) charging stations. Two grants were obtained, one from the California Energy Commission (CEC) and the other from the South Coast Air Quality Management District (SCAQMD) Mobile Source Air Pollution Reduction Review Committee (MSRC).

Like 2

Electric Vehicle Charging Stations

A total of 9 electric vehicle charging stations will be installed at four locations throughout the City. There will be six Level 2 chargers and three Level 3 DC fast chargers. Charging stations will be conveniently located at:

- Corona Pointe [MAP]
 - 3 Level II Chargers at Corona Pointe, 1265 Corona Pointe Court
- The Shops at Dos Lagos [MAP]
 - 3 Level II Chargers at The Shops at Dos Lagos, 2780 Cabot Drive
- City Hall [MAP]
 - 1 DC Fast Charger at Corona City Hall, 400 S. Vicentia Avenue
- Corporation Yard [MAP]
 - 2 DC Fast Chargers at Corona's Corporation Yard, 735 Public Safety Way



Bicycle Lockers and Racks

With these funds, the City will install a total of 20 bicycle lockers and 43 bike racks. Each locker can hold one bike. Bike lockers and racks will be installed at the following locations:

Location	Bike Racks	Bike Lockers
Auburndale Park	1	
Border Park	1	
Brentwood Park	1	
Butterfield Park	1	
Chase Park	1	
Circle City Center	1	2
Citrus Park	2	4
City Corporation Yard		2
City Hall		4
City Park	3	
Contreras Park	1	

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Lincoln Park	2	
Mangular Park	1	
Merrill Park	1	
Mountain Gate Park	2	
Ontario Park	1	
Parkview Park	1	
Promenade Park	3	
Ridgeline Park	1	
River Road Park	1	
Rock Vista Park	1	
Santana Park	4	4
Serfas Club Park	1	
Sheridan Park	1	
Spyglass Park	1	
Stagecoach Park	1	
Victoria Park	2	

Look for more announcements when these new facilities will be ready for use. For questions, please contact the City of Corona Department of Water and Power or Maintenance Services Department at 951-736-2234.

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New Electric Vehicle Charging Stations Installed with Grant Funds

The City of Corona is pleased to announce that a total of 8 electric vehicle charging stations have been installed at four locations throughout the City. The stations were funded through grants received by the California Energy Commission's (CEC) [Alternative and Renewable Fuel and Vehicle Technology Program](#) and the South Coast Air Quality Management District's (SCAQMD) [Mobile Source Air Pollution Reduction Committee \(MSRC\)](#). There are 6 Level II chargers and 2 Level III DC fast chargers.

Charging stations are located at:

- [Corona Pointe](#) (3 Level II chargers)
- [The Shops at Dos Lagos](#) (3 Level II chargers)
- [City Hall](#) (Level III charger)
- [Corporation Yard](#) (Level III charger)

All chargers are part of the ChargePoint network. You can create a Chargepoint account by [signing up through their website](#) or [downloading their mobile app](#).

The City of Corona would like to thank Rexco Magnolia, LLC and The Shops at Dos Lagos for working with the City to install the charging stations for the public's use and benefit.

For questions, please contact the [City of Corona Department of Water and Power](#) or [Maintenance Services Department](#) at (951) 736-2234.

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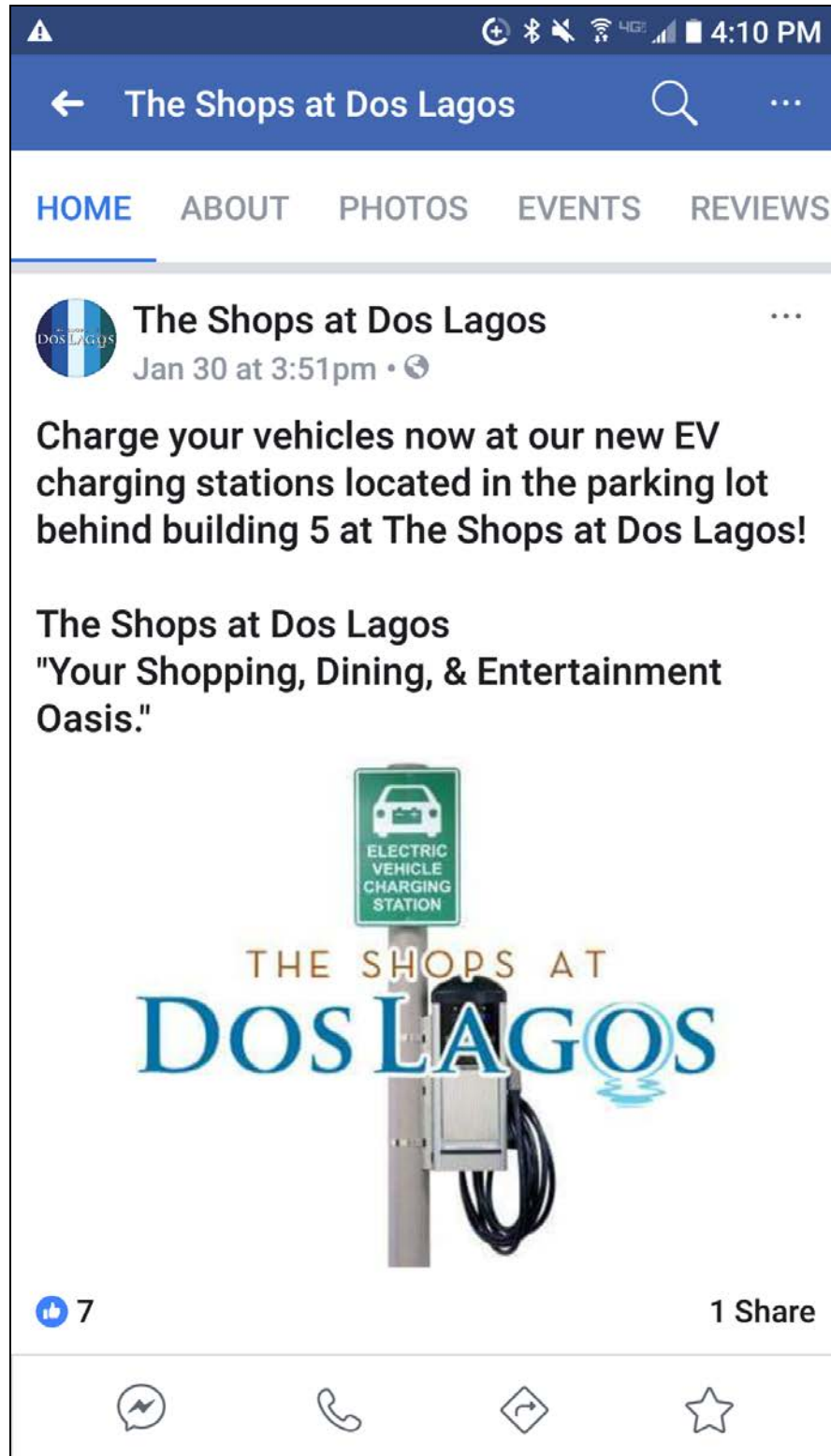
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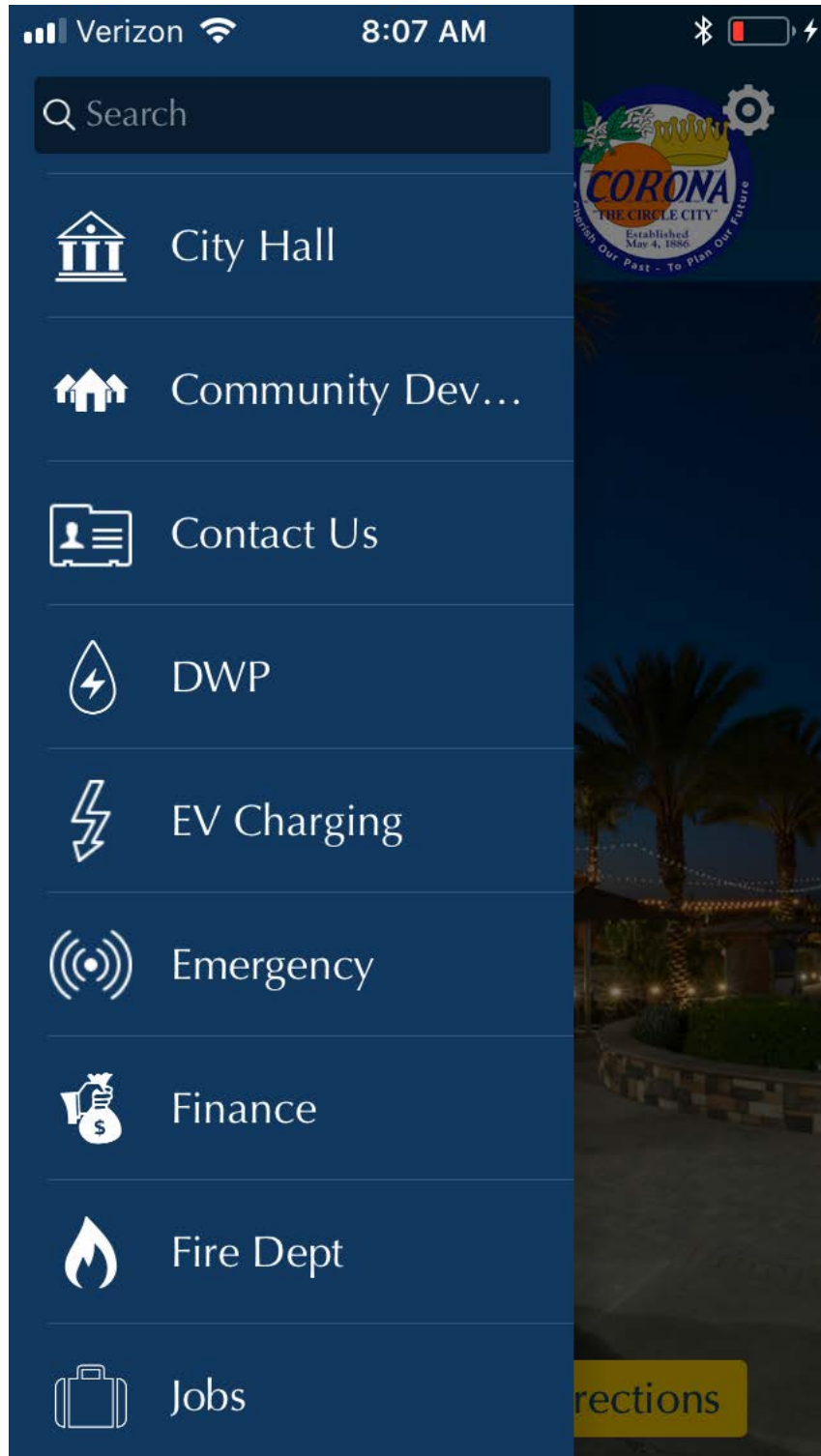
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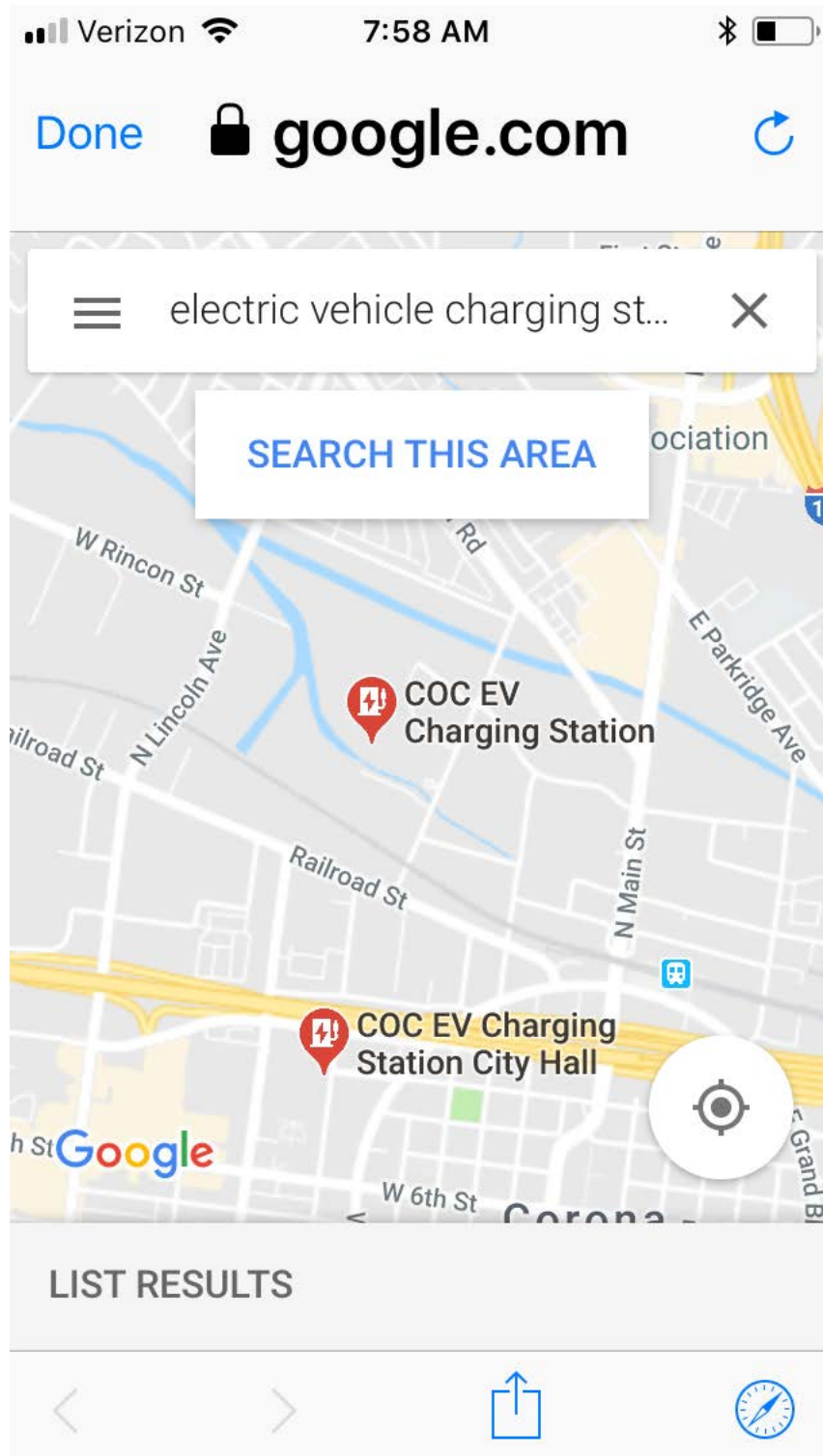
Screen Shot from The Shops at Dos Lagos Facebook Page



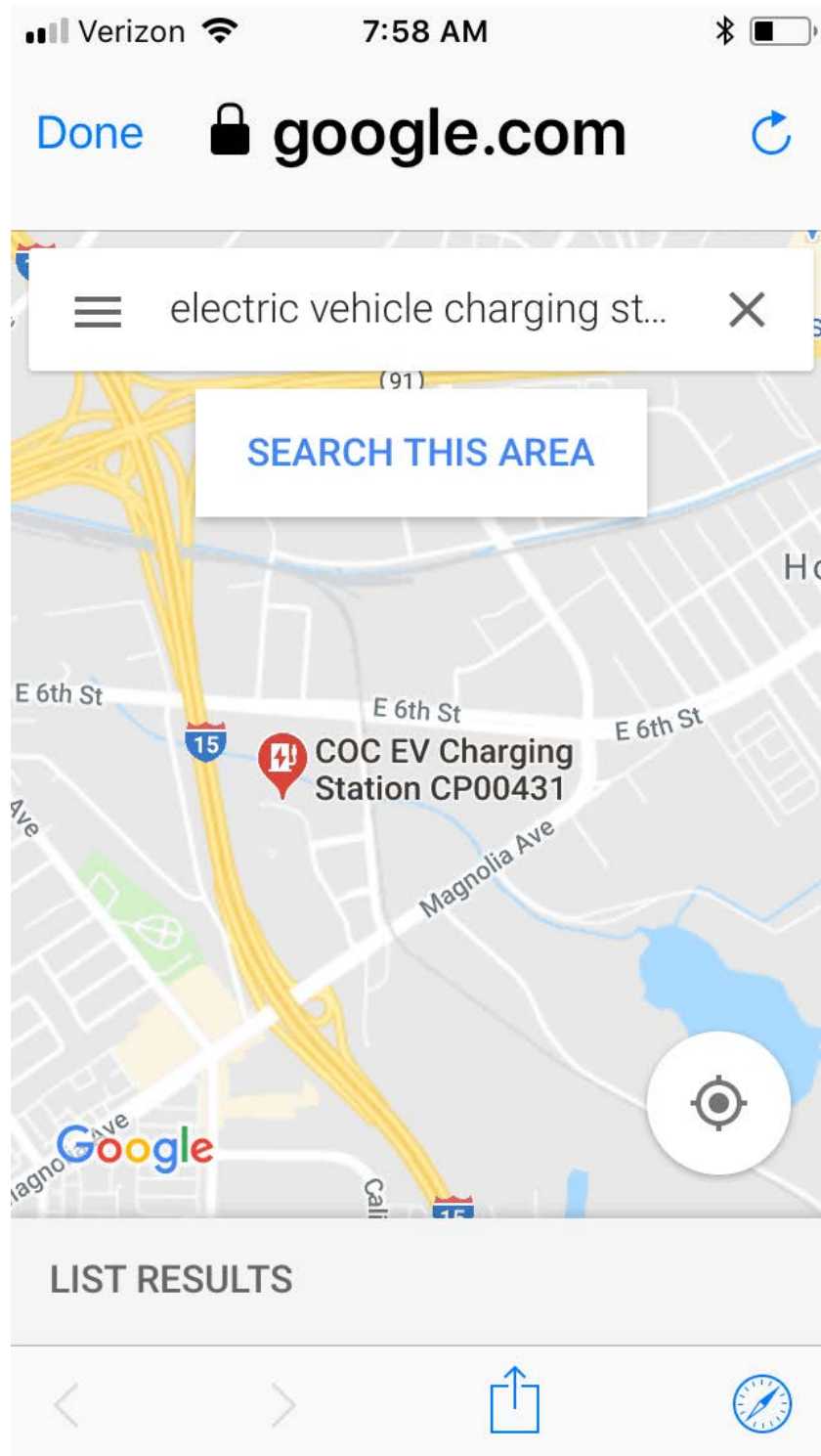
Screen Shot from City of Corona Mobile App



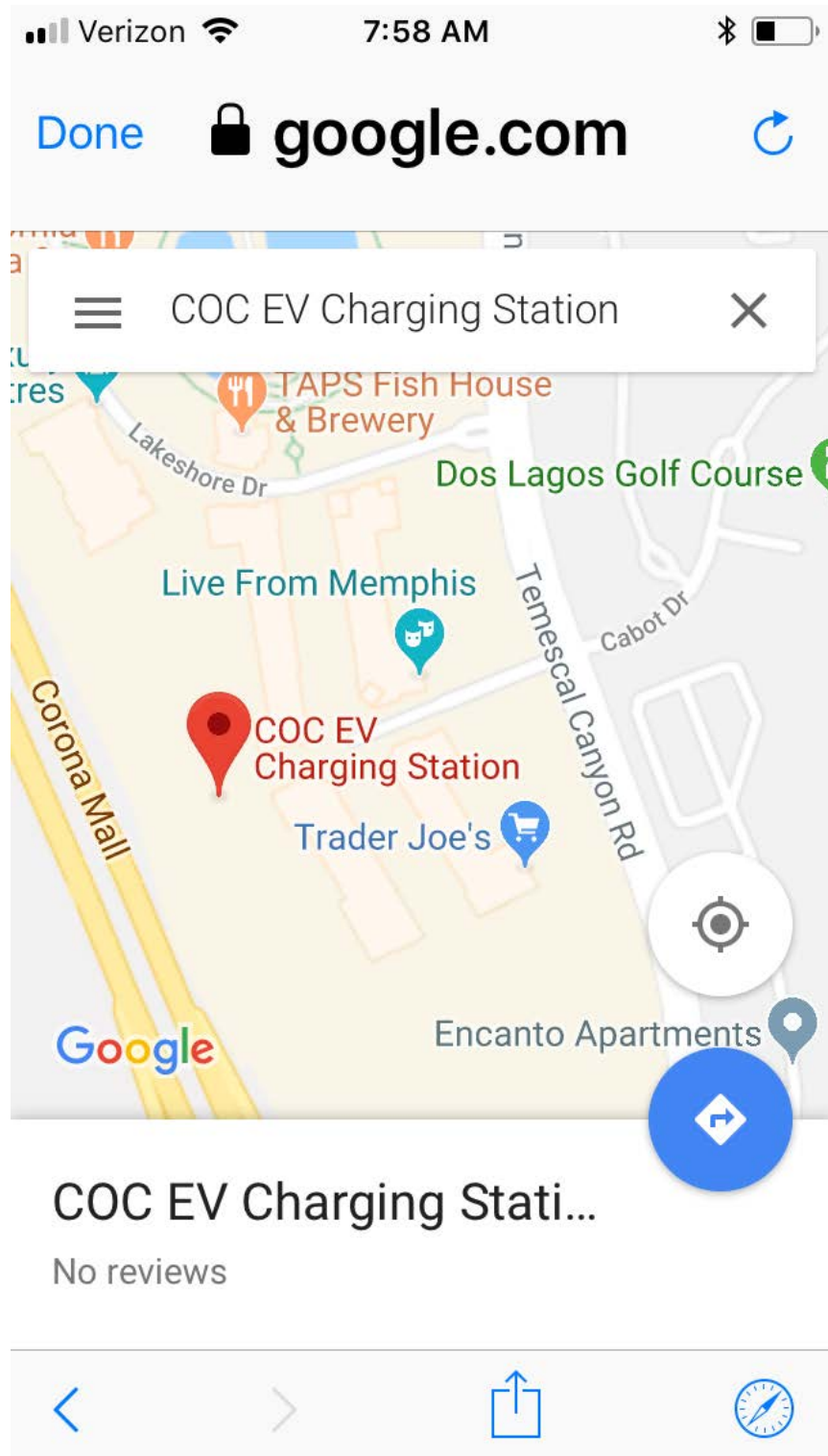
Screen Shot from City of Corona Mobile App



Screen Shot from City of Corona Mobile App



Screen Shot from City of Corona Mobile App



Bike Racks



Bike Lockers



Charging Station – City Hall



Charging Station – Corporation Yard



Charging Stations – Corona Pointe



Charging Stations – Dos Lagos

