STAFF REPORT

DATE: June 28, 2022

TO: City Council

FROM: Stan Gryczko, Director Public Works Utilities and Operations
Dianna Jensen, Acting Director PWET / City Engineer
Adrienne Heinig, Assistant to the Director PWUO
Kerry Loux, Sustainability Coordinator, Community Development and Sustainability

SUBJECT: Electric Vehicle Charging Infrastructure Phase I Final Report; and Amendment No. 1 to Frontier Energy, Inc. Professional Services Agreement to Complete Fleet Electrification Study, CIP ET8341

Recommendations

1. Receive the Electric Vehicle Charging (EV) Infrastructure Phase 1 Final Report (Attachment 1) for the City of Davis Phase 1 component of the project. Approve recommendations of site locations for Phase 1 Implementation.
2. Approve the attached Resolution (Attachment 2) authorizing the City Manager to execute Amendment No. 1, in the amount of $66,430 to the EV Charging Infrastructure Phase 1 professional services agreement (PSA) with Frontier Energy, Inc. for completion of the Fleet Electrification Study. The proposed scope of work is included (Attachment 3).

City Council Goals

The proposed actions directly support the City Council Goal to Pursue Environmental Sustainability.

Additionally, implementation of EV charging infrastructure and City fleet electrification supports the *Resolution of the Council Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate*, adopted in March 2019, which states, in part, “The City of Davis commits to taking significant action to move toward net municipal and community carbon neutrality in the short term, with maximum efforts to implement carbon reduction actions by 2030; and accelerate the existing 2050 Davis carbon neutrality goal to a 2040 target.”

This EV charging infrastructure implementation and City fleet electrification planning work is directly related to two of the draft Climate Action and Adaptation Plan (CAAP) actions approved by City Council on May 24, 2022. Action B.1 is “Update and implement the Davis Electric Vehicle Charging Plan to determine public and private charging infrastructure needs, time frame, and implementation approach to enable all vehicles to go electric”, which is related to implementing the identified EV charging stations in Phase 1. Action B.2 is “Develop an aggressive plan to transition the municipal vehicle fleet to alternative fuels (e.g. electric, battery electric, hydrogen

vehicles)," which is related to completing the Fleet Electrification Study.

Fiscal Impact

CIP ET8341 includes $2.9M in grant funds related to infrastructure implementation commitments in the Sacramento Area Council of Governments (SACOG) Fund Exchange Agreement (FEA) described below. Roughly $2M is Davis' share of the grant funds.

The original Professional Services agreement with Frontier Energy, Inc. was in the amount of (not to exceed) $200,000. One product from this scope of work is the attached Electric Vehicle Charging (EV) Infrastructure Phase 1 Final Report and includes recommendations of site locations for Phase 1 Implementation. The proposed Amendment No. 1, in the amount of $66,430, includes completion of the Fleet Electrification Study to identify a roadmap to transitioning the municipal fleet to renewable fuel vehicles. This additional scope will bring the total agreement amount to not to exceed $266,430.

Commission Input

Recommendations for Phase 1 EV infrastructure implementation were twice presented by staff and Frontier Energy, Inc. to the Natural Resources Commission (NRC). A Commission-appointed representative of the Bicycling, Transportation and Street Safety Commission (BTSSC) was present to participate in the discussion, provide feedback as needed, and report back to the BTSSC. Previously, two presentations were provided to the Utilities Commission (UC) in May and June 2020 to get input on content and approach prior to the release of the consultant Request for Proposals for EV Charging Infrastructure.

On November 29, 2021, the preliminary Phase 1 EV infrastructure report was presented to the NRC, with the purpose of reviewing recommended site locations and chargers included in Phase 1, and having an initial discussion of future Phase 2 goals (to be developed later and not included in current recommendations) for EV planning, infrastructure and adoption. Recommendations from the NRC, BTSSC and public comments are noted below and responses were incorporated into the Final Report and presentation at the April 25, 2022 NRC meeting.

On April 25, 2022, discussion from the NRC, BTSSC and public comment focused on understanding that the current infrastructure planning and site locations (Phase 1) are in response to commitments in the FEA with SACOG. Future EV infrastructure planning will incorporate community input to determine site locations (Phase 2). The consultant and staff noted that Phase 1 site location identification is intended to benefit Davis residents, address regional transportation corridor needs, and improve multi-modal capacity, as per the Green Region grant funding and SACOG parameters. Following discussion, no summary motion with recommendations to City Council was made by the NRC at this meeting. Specific comments for future implementation included supporting the importance of locating chargers at multi-family/rental housing locations, considering vehicle to grid implications, and addressing concerns about site locations and costs for

future EV infrastructure implementation, such as recommending additional Level 2 chargers at the proposed Olive Drive location.

The attached Phase 1 Final Report addresses completion of the City of Davis commitments in the Green Region Grant FEA between SACOG and City of Davis, including Commission input.

Related to the Fleet Electrification Study, the NRC is also the lead advisory body to City Council for the CAAP, and incorporates comments from eight other Commissions who have appointed CAAP liaisons to attend NRC meetings (all Commissions receive monthly CAAP reports and have been invited to appoint a liaison). As noted above, implementation of the Fleet Electrification Study is directly related to CAAP actions that have been reviewed monthly by the NRC prior to approval of CAAP actions at the May 24, 2022 City Council meeting.

Background Information

Electrify Yolo is a regional project, with City of Davis as the lead agency, and includes Yolo County, Valley Clean Energy Alliance (VCE) on behalf of City of Winters, and City of Woodland. The project is funded under a SACOG Green Region grant, with a total funding of $2,911,752. The City of Davis will be implementing approximately $2 million of the total grant award, with the remaining $1 million being implemented by the other partners, as per the Electrify Yolo agreement. Each of the partners is implementing their EV infrastructure projects individually. All funds for the entire project were defederalized through an FEA between SACOG and Davis.

The goals of the project in Davis are to:

- Install public charging stations
- Benefit Davis residents
- Build internal capacity for Davis as a destination
- Improve multi-modal hub development in Davis downtown

Note that substantive additional City of Davis grant funding (likely over $1 million) is anticipated to remain after completion of the Phase 1 grant-related FEA commitments, including charging infrastructure construction. These remaining funds will be used to continue efforts in the City's EV charging infrastructure planning and implementation. These further phases are not limited by grant funding constraints and will be initiated following completion of Phase 1. This planning and implementation will include community input on EV charging infrastructure site locations to make sure that community needs and interests, along with recommendations from professional expertise, are met.

Phase I Charger Locations and Ownership Model

The City of Davis hired the consultant, Frontier Energy, Inc, to complete design of the Phase 1 EV charging infrastructure component of the project. This includes 1) developing a planning framework for EV charging infrastructure in Davis; and 2) identifying Phase 1 site locations and developing construction documents, permitting

and environmental review to complete installation of charging infrastructure. This will comply with the commitments in the FEA with SACOG in advance of the December 2023 deadline.

Phase 1 components include:

- At least two network DC Fast Chargers (DCFC) that have easy highway access and three Level 2 charging stations on publicly owned land
- Fiscally prudent construction and operation
- Locations that can encourage adoption of EVs by people who drive to or through Davis
- Identification of future EV charging station locations (Phase 2) that can serve a variety of Davis residents
    - Selection and evaluation of these locations will be done following completion of Phase 1
    - Anticipated remaining grant funding from Davis' $2 million total following Phase 1 completion of FEA commitments, will be used by Davis to implement Phase 2

The attached Frontier report provides a planning framework for EV charging infrastructure in Davis, including fiscally prudent construction and operation and recommended locations that can encourage adoption of EVs by people who drive to or through Davis.

Based on consultant research and recommendations included in the report, the optimal method of City EV charging infrastructure delivery is City ownership with contracted vendor technical support including maintenance agreements. Staff support this ownership model recommendation. The models studied are summarized below and in the attached report. It is anticipated that staff will discuss fee collection models with the Utilities Commission and come back to Council with recommendations for implementation of fee collection as part of the vendor service agreement.

The consultant team identified and evaluated three owner/operator models that are summarized in Table 1. Based on discussions with charging vendors and local jurisdictions, most cities own their own EV charging stations but contract with their charging vendors for technical support including maintenance. This is the recommended structure for Davis, too.

Table 1: Owner/Operator Models for Public EV Charging

Model	100% Davis Owned and Operated	Shared with Vendor	100% Vendor Owned and Operated
Brief Description	Davis purchases and installs the charging stations and keeps 100% of the charging and LCFS revenue	Davis purchases equipment, vendor installs and operates stations; Davis and vendor share ownership	Vendor purchases equipment and operates, Davis or vendor pay for construction
100% Availability	Via a maintenance contract; equipment provider provides individual driver support	Vendor provides technical support, maintenance, and operation	Vendor provides technical support, maintenance, and operation
Staff Role	Potentially to issue work orders and financial reporting	Pay (or collect) monthly fees to/from vendor, and for charging station fees	Pay annual fee to vendor
Revenue Option 1	100% Davis; Davis sets price at charging station	Split: Davis keeps station revenue; vendor keeps LCFS credits	Split: Davis keeps 40% of station revenue; vendor keeps 60% station revenue and LCFS credits[1]
Total Rough Costs for Five Years[2]	$678,200	$700,200	$919,500
Total Potential Revenue for Five Years	$305,000	$190,000	$76,000

Through an iterative site recommendations process that included community input, data analysis, utility data, and site inspections and described in Appendix 1, the consultant has recommended sites for installation in Phase 1. Key considerations for selected locations are:

- Visibility to people who live, work, and visit Davis to encourage them to switch to an EV.

[1] Percentage depends on the vendor
[2] Average costs for EVSE purchase and operation; does not include the potential cost of the Amtrak lot upgrade

- Potential for expansion to other forms of electric or active transportation.
- Replacing existing chargers which do not allow for fee collection, with "smart" chargers so that the City can collect fees to offset energy use and maintenance costs.
- Minimizing construction time and costs associated with upgrading or adding electrical panels, replacing underground conduit, and increasing the electrical service from PG&E.

On November 29, 2021, the consultant team recommended five sites to the City's Natural Resources Commission (NRC) for public input. Comments were received from the Commission and the public during the meeting.

As a result of input, the consultant team added Central Park and H Street to the list of public sites to evaluate and contacted the owners of the privately-owned retail properties and parking lots recommended. The surface parking lot suggested is too small to add charging stations and curbside charging on H Street does not have access to a City-owned meter. Private property owners didn't return calls and the consultant team couldn't obtain electric use data.

After physical inspections, the consultant team revised its recommendations as listed in the report's Table 4 below.

Table 2: Revised Site Recommendations

Location	Existing	Proposed
City Hall	Two pedestal mount Clipper Creek (no fee collection capability)	Up to four smart dual-port Level 2 stations (with a potential for additional chargers in future phases)
4th & G Garage	Two pedestal mount Clipper Creek (no fee collection capability)	One or two smart dual-port Level 2 stations (wall mount)
E Street Parking Lot	Two pedestal mount Clipper Creek (no fee collection capability)	One smart dual-port Level 2 station
Amtrak	One pedestal mount charging station (no fee collection capability)	One dual-port DCFC and up to smart dual-port Level 2 stations, make ready for future mobility hub
Olive Drive	None	One dual-port DCFC, potentially a high-speed 150kW charger, and make-ready for additional EVSE (as potential for additional chargers in future phases)
Central Park	None	Seek a grant for a future mobility hub and park/street update

These proposed site locations are being brought to City Council for approval at this time. Following Phase 1 site location approval, construction documents, cost estimates, environmental review and permitting will be completed within the current consultant contract. City staff will manage the bidding process for contractor selection to install Phase 1 EV charging stations. All FEA commitments are required to be completed by December 31, 2023. We anticipate coming to Council with construction award documents in late Fall or Winter with a Spring construction start date.

Fleet Electrification Study

The original proposal from Frontier Energy, Inc. for Electric Vehicle Charging (EV) Infrastructure Phase 1 included a Fleet Electrification Study as optional item 7. At the time of execution of the consultant contract, staff did not recommend including this optional item in the contracted scope of work (SOW).

On May 24, 2022, City Council approved the prioritized CAAP actions (see Council Goals section above). A key goal addresses adopting zero emissions vehicles and equipment to reduce fossil fuel use community-wide. The CAAP On-road Transportation item B.2 states: “Develop an aggressive plan to transition the municipal vehicle fleet to alternative fuels (e.g. electric, battery electric, hydrogen vehicles).” In response to this development, staff is recommending expediting this fleet study to identify an implementable roadmap, timeframe and actions needed to transition the municipal fleet to renewable fuel vehicles.

The proposed scope of work for this amendment No. 1 with Frontier is included as Attachment 3.

Attachments

1. Electric Vehicle Charging Infrastructure Phase I Final Report
2. Resolution authorizing Amendment No.1 to Frontier Energy, Inc PSA
3. Proposal for Fleet Electrification for Amendment No. 1

City of Davis

Final Recommendations

EV Charging Infrastructure Phase I

Prepared by:

Frontier Energy, Inc.

DKS Associates

Background

Electrify Yolo is a regional project, with City of Davis as the lead agency, and includes Yolo County, Valley Clean Energy Alliance (VCE) on behalf of City of Winters, and City of Woodland. The project is funded under a Sacramento Area Council of Governments (SACOG) Green Region grant, with a total funding of $2,911,752. The City of Davis implemented approximately $2 million through a Fund Exchange Agreement (FEA) between SACOG and Davis to de-federalize the funding for the entire project.

The goals of the project are to:

- Install public charging stations
- Benefit Davis residents
- Build internal capacity for Davis as a destination
- Improve multi-modal hub development in Davis downtown

Phase 1 of the project is to develop a planning framework for EV charging infrastructure in Davis that includes:

- At least two network DC Fast Chargers (DCFC) that have easy highway access and three Level 2 charging stations on publicly owned land
- Fiscally prudent construction and operation
- Locations that can encourage adoption of EVs by people who drive to or through Davis
- Identification of Phase 2 locations that can serve a variety of Davis residents
    - Evaluation of these locations will be done in Phase 2

Site Recommendations

Through an iterative process that included community input, data analysis, utility data, and site inspections and described in Appendix 1, the following sites are recommended for installation in Phase 1.

Key considerations for selected locations are:

- Visibility to people who live, work, and visit Davis to encourage them to switch to an EV.
- Potential for expansion to other forms of electric or active transportation.
- Replacing existing “dumb” chargers with smart chargers so that the City can collect fees to offset energy use and maintenance costs.
- Minimizing construction time and costs associated with upgrading or adding electrical panels, replacing underground conduit, and increasing the electrical service from PG&E.

City Hall currently has two dumb charging stations that appear to be underpowered. These stations enable people to charge for free and it is likely that the stations charge very slowly. Replacing these will enable the City to collect fees for charging, manage energy use during peak hours, communicate with the users, and reduce staff time for maintenance and trouble shooting. Drivers will receive a faster, more-reliable charge. Pay-per-charge will discourage people from parking while not actively charging.

The City is slated for a major electrical upgrade that will add a generator for backup power. Because this project includes extensive electrical upgrades and parking lot resurfacing, the City could add up to four dual port Level 2 charging stations. Yolo County is considering installing Level 2 stations at A Street side of the lot.

The consultant team is coordinating with the generator project to estimate costs and determine the numbers and exact locations of charging stations.

4th & G garage currently has two dumb charging stations that can be replaced with one dual-port smart station or two dual-port stations to expand the number of charging spots. This garage is privately owned and managed; it is not City property. Replacing these will enable the owner and/or City to collect fees for charging, manage energy use during peak hours, communicate with the users, and reduce time for maintenance and trouble shooting. Pay-per-charge will discourage people from parking while not actively charging.

The current stations were installed with grant funding. The panel has capacity for an additional station and the conduit is exposed and overhead. Construction costs will be minimal.

The consultant team is coordinating with the property manager to estimate costs and determine the number of charging stations.

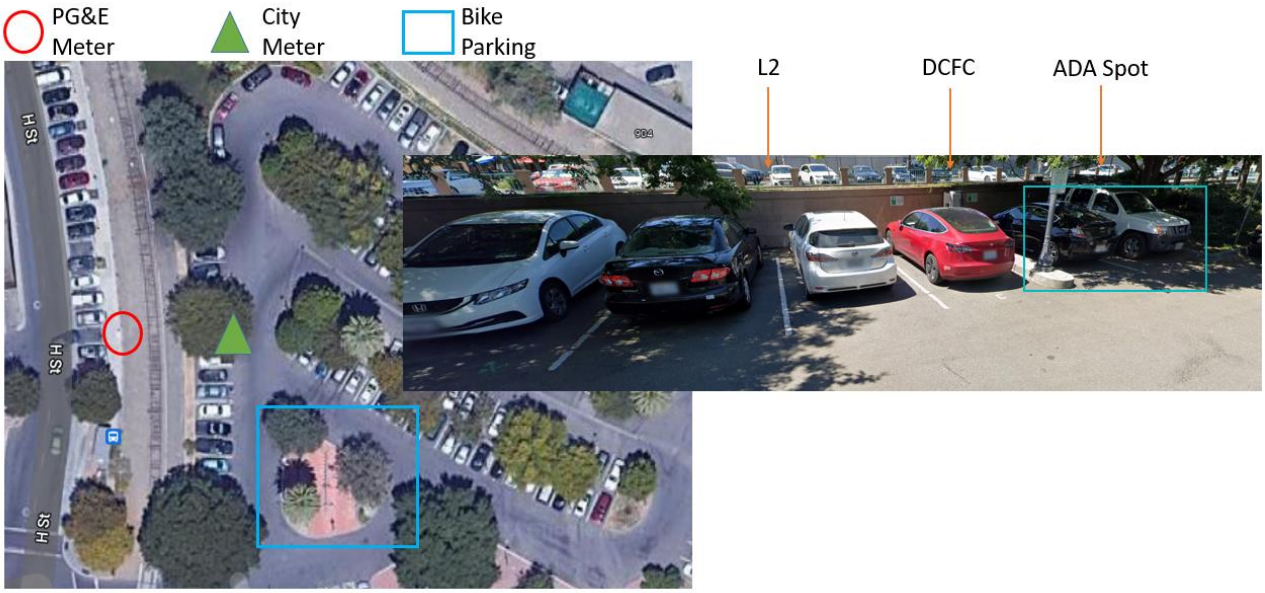
Amtrak currently has an old inductive charging station that is not connected to the electrical panel and a single-port dumb charging station. The charging station appears to be very slow, and cars are parked in the two spots next to the station for several hours. Community suggested that adding more EV stations could reduce the overall number of parking spaces in the lot and suggested adding curbside charging along H Street.

The location has been evaluated as an e-bike charging hub, a location for ride-hail charging, and an opportunity to charge electric buses and has been rejected because the electrical capacity is tapped out. As shown in Figure 1, two meters serve the parking lot: a City meter in the parking lot and a PG&E meter on the curb at H Street. Both need to be upgraded and the conduit under the track may need to be replaced.

The opportunities outweigh the challenges. The grant funding will enable a major electrical upgrade that the City can leverage for future grants to create a multimodel hub. With electric upgrades, the location will be able to support a DC Fast Charger and up to two dual-port Level 2 stations, and future mobility features. The DCFC will be a quick charging spot for visitors and for ridehail drivers, and charging fees collected will discourage all-day parking in all the spots. The grant can also cover the cost of resurfacing parking spaces that are not usable because of deep cracks and raised pavement.

The consultant team is coordinating with PG&E about their ability to upgrade the PG&E meter and to estimate costs and determine the number of charging stations.

Figure 1: Amtrak Station



E Street parking lot currently has one dumb single-port Level 2 charging station at the end of the parking lot nearest F Street that can be replaced with a dual-port smart station.

Community feedback was that this parking lot is slated for renovation and to be cautious about investing in this location. Development, however, is several years in the future. Replacing this station now will enable the City to collect fees for charging, manage energy use during peak hours, communicate with the users, and reduce staff time for maintenance and trouble shooting. Drivers will receive a faster, more-reliable charge. Pay-per-charge will discourage people from parking while not actively charging.

The electric meter is at the other end of the parking lot, closest to E Street, and the existing conduit is too small to accommodate additional wires from the meter. Therefore, the consultant team recommends replacing the existing charging station using the wires and breaker that supply power to the current charging station. One parking space will need to be reconfigured to meet the requirements for ADA access.

This location doesn't need additional coordination to move into planning.

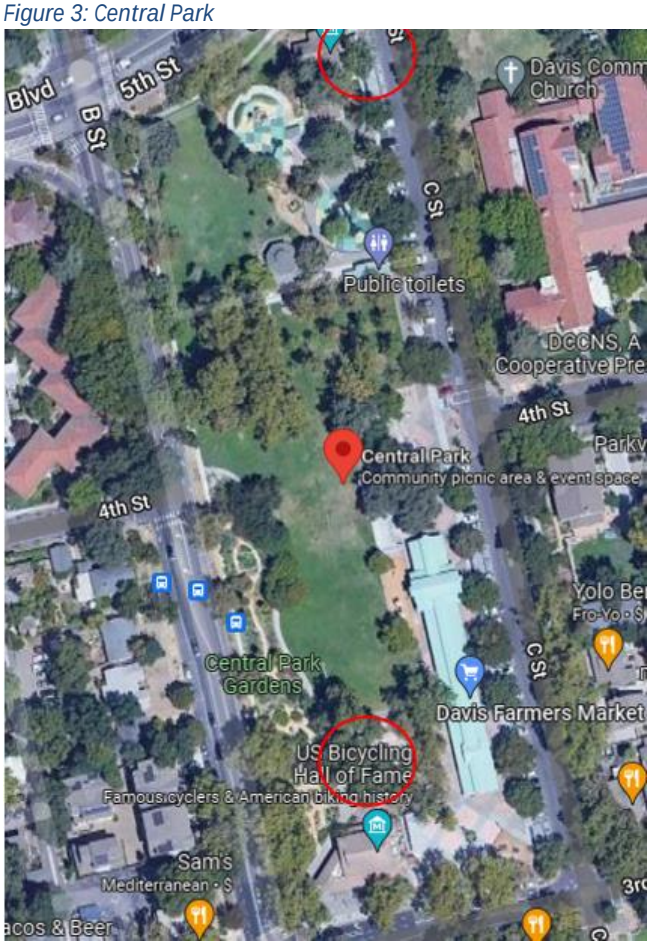
979 Olive Drive is a newer park and ride lot. It is an excellent location to add a dual-port DCFC and potentially add the conduit and wiring for additional charging spaces in the future. This could potentially be a high-powered DCFC (150kW), which would be the first in the Sacramento area. This site also presents an opportunity to plan for an e-bike hub or transit charging location.

The parking lot currently has only low-voltage electricity for lighting that is powered from a meter that is across the intersection of Olive Drive and Richards Blvd. However, a PG&E transformer is mounted on a power pole on Richards Blvd less than 10 feet from the parking lot (circled in Figure 2) and the ground is covered by dirt, not concrete. It should be cost-effective to drop power from the pole and install the electrical for one or more charging stations in the area circled in red.

The consultant team is coordinating with PG&E about their ability to upgrade the PG&E meter and to estimate costs and determine the number of charging stations.

Figure 2: Olive Drive

Figure 3: Central Park



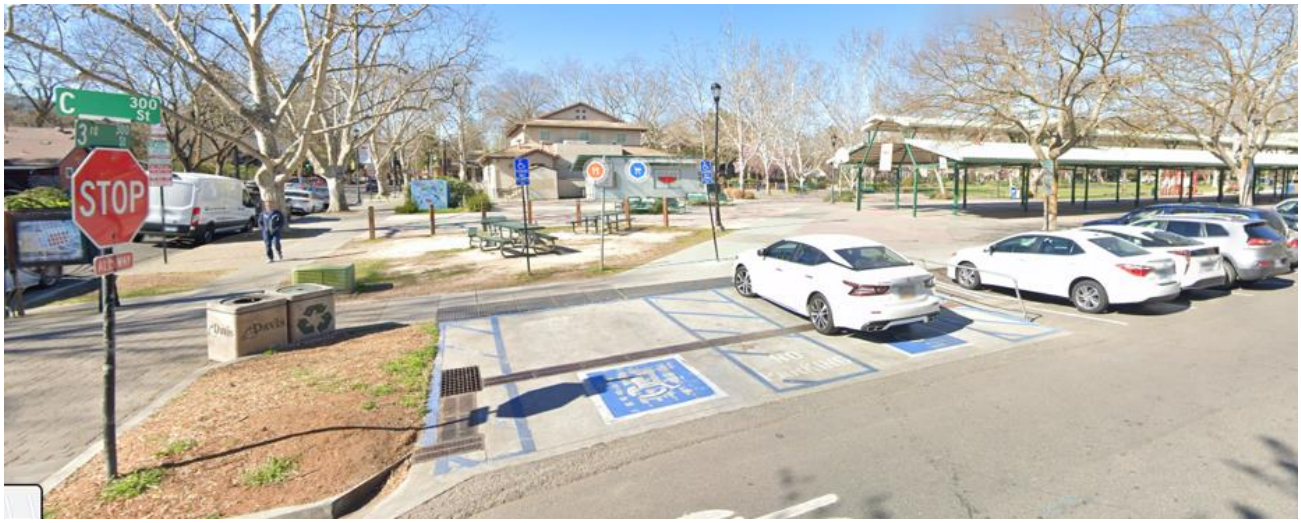
Central Park was recommended by community members as a location to serve residents and visitors. Central Park has two meters at the areas in the red circles in Figure 3, one at the Hattie Webber Museum and one at the Bicycling Hall of Fame. In both locations, the electricity is for the building. The park doesn't have street lighting and other structures don't have power. At the north of the park, PG&E has a meter that could provide power to a Level 2 charging station.

Figure 4 shows nose-in curbside parking on C Street and only the only spot that is large enough for a charging station and is next ADA parking. It is likely that the existing tree would need to be trimmed or removed to install the EVSE and lighting. The culvert and curb are tripping hazards.

Figure 4: Space for EVSE

The consultant team recommends that the south end of Central Park, in Figure 5, be prioritized in Phase 2 and that the City apply for a SACOG or Caltrans grant that focuses on activation of the south end of the park. This could include redesigning C Street to remove the culvert and add lighting, an e-bike hub, and Level 2 charging stations.

Figure 5: South End of Central Park



Ownership Models

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Revenue Option 1	100% Davis; Davis sets price at charging station	Split: Davis keeps station revenue; vendor keeps LCFS credits	Split: Davis keeps 40% of station revenue; vendor keeps 60% station revenue and LCFS credits[1]
Total Rough Costs for Five Years[2]	$678,200	$700,200	$919,500
Total Potential Revenue for Five Years	$305,000	$190,000	$76,000

Charging Station Providers

Davis expressed interest in using a vendor that has stations in the Sacramento area so that the Davis stations extend an existing network. The networks that are most prominent in the Sacramento/Yolo/Solano County area are:

ChargePoint has nearly 100 Level 2 and DCFCs in the region. Users can pay with the ChargePoint card, phone app, or credit card at some locations. Pricing is unique in that the company allows the property

[1] Percentage depends on the vendor
[2] Average costs for EVSE purchase and operation; does not include the potential cost of the Amtrak lot upgrade

owner where the charger is located to set charging rates. At the ChargePoint DCFC at the 7 Eleven on Mace, payment is $0.36/kWh and $0.05/min for parking while charging. When not charging parking is $0.25/min. At the DCFC in downtown Sacramento, charging is free and at Arden Fair Mall, it's $0.33/kWh.

The City of Sacramento contracted with ChargePoint for Level 2 charging in City-owned garages. Yolo County plans to buy ChargePoint charging stations with its part of the Green Regions grant. West Sacramento is installing ChargePoint chargers in its Plug-in Partnership grant from SACOG.

Electrify America (EA) has about 20 DCFC and five Level 2 chargers in the area, many of which were installed with VW settlement funding. EA has two member programs: Pass is free and Pass+ is $4.00 a month. Stations accept payment by phone app, EV card, or credit card. Pricing for all DCFCs in the area is $0.43/kWh for Pass members and $0.31/kWh for Pass +. The Level 2 chargers are free.

EVgo has about 25 DCFC in the area, some with a Level 2 option. EVgo has two pricing plans: *Pay As You Go* that does not have a membership fee, but does charge a $1.00 or $2.00 session fee, and *EVgo Member* that costs $5.00 a month. Each station has variable pricing:

- Early bird (12am-8am) $0.35/kWh
- Off- Peak (8am-4pm, and 9pm-12am) $0.45/kWh
- On-Peak (4pm-9pm) $0.52/kWh

GreenLots/Recharge has 11 DCFC and six Level 2 stations. GreenLots was recently acquired by Shell and is rebranding to Shell Recharge. It is transferring some of the existing stations to other operators and upgrading other locations to new equipment. Recharge does not require a membership fee and uses both a QR code and a credit card for payment, and has 24-hour driver telephone support in multiple languages. The current GreenLots DCFCs charge a $0.35 access fee and $0.25/kWh, although this might change. SMUD partnered with Shell Recharge for the new eFuel program, which will rapidly increase the number of Recharge stations in SMUD territory.

SemaConnect has 15 locations with Level 2 charging, including at Kaiser in Davis. The stations accept payment by phone app or a payment kiosk, and charge by the hour, between $1.35 and $2.00. New stations cannot have an hourly payment price; all Level 2 stations must change by the kWh.

Blink has six Level 2 chargers including one in Davis. Members of the Blink network pay $0.49 per kwh and "Blink Guests" pay $0.59 per kwh. Blink also has DCFCs but not in the Sacramento area.

Ultimately, a competitively bid RFP will determine the charging stations vendor, and it may be awarded to a vendor not on this list. The Energy Commission recently approved awards for several vendors that are new to the California market and are bringing innovative approaches to charging station design.

Appendix 1: Site Selection Approach

In 2017, City Council adopted the City of Davis EV Charging Plan (EVCP) which included a list of 31 sites for public Level 2 and DC Fast Charging. Between the time the plan was written, and the Green Region grant was funded, charging stations we installed at several of the sites. The aim of this project is to identity locations at with the City can make public charging available.

Through an iterative process, project site locations were identified for Phase 1:

- City Hall
- Downtown E Street parking lot
- Downtown Parking garage at 1st and F
- Downtown Parking garage at 4th and G streets
- South Davis Nugget shopping center
- Sutter Davis Hospital/Medical Offices
- Davis Police Department
- Davis Public Works Department (1717 5th Street)
- Davis Fleet/ Parks (1818 5th Street)

The consultant team added additional sites identified in the 2017 EVCP that did not already have Level 2 and/or DC Fast Chargers additional sites that have been developed or acquired since 2017.

Sites that are privately owned, like Sutter Health and Nugget Market, are challenging for a local government project because it raises issues about ownership, operational responsibility, and insurance/risk. If private sites are desired, the consultant team recommends offering property owners incentives and technical support so that they install charging stations.

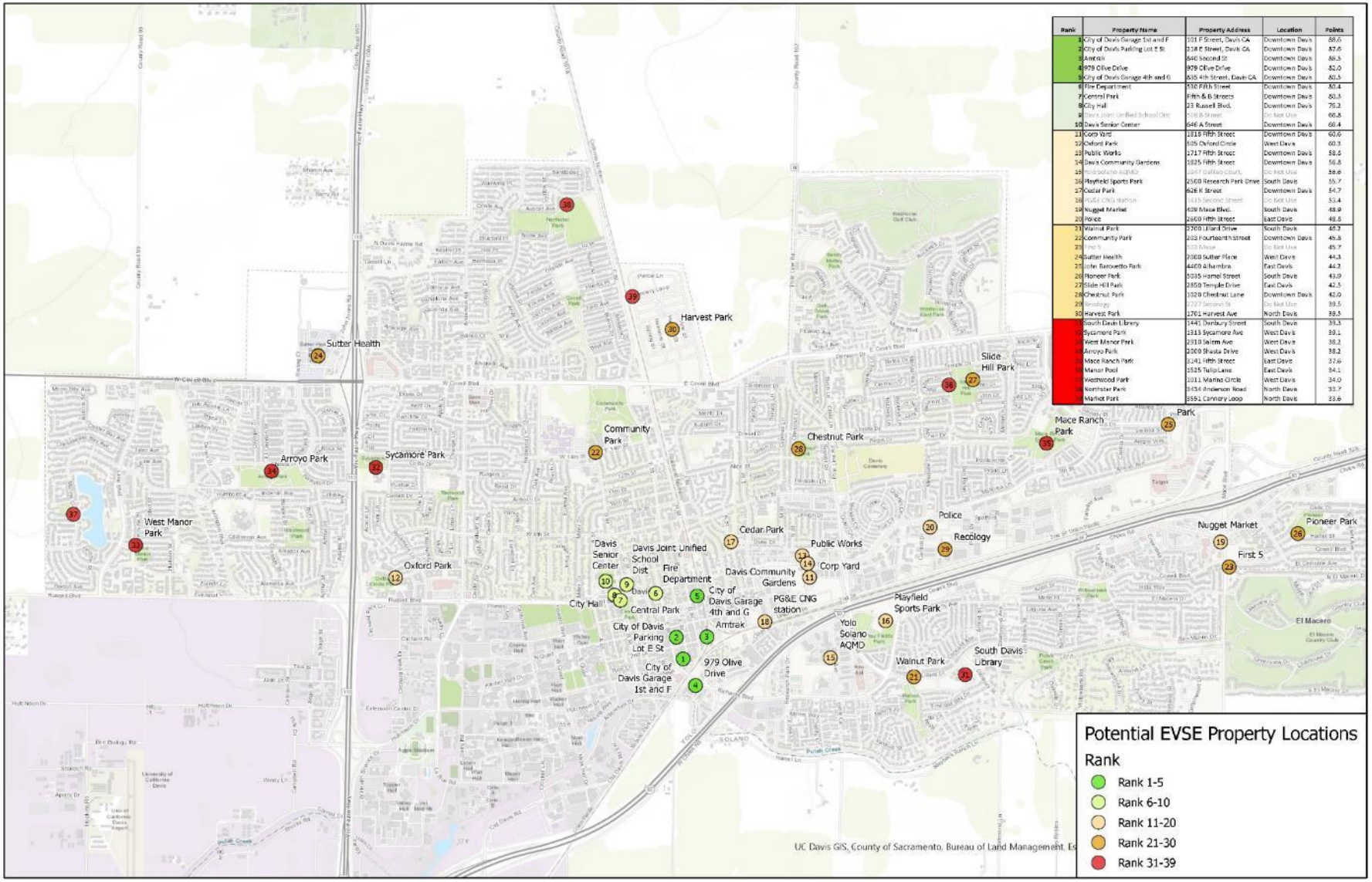
Using a data-driven approach, Frontier and DKS evaluated 38 locations within Davis (excluding the UC Davis campus).

All locations were entered into a GIS map that also included existing and planned public charging stations and building projects that would result in charging stations as required by California's CalGREEN building code. The consultant team prioritized sites based on:

- Distance from a highway exit
- Estimated traffic flows from SACOG's models
- Number of jobs and employers
- City-controlled property

Sites were assigned a color base on the match to Phase 1 criteria, as shown in Figure 6. Green circles are the closest match and red are the farthest match. The colors do not indicate that a site is "good" or "bad," and some sites may closely match other criteria.

Figure 6: Results of Data Analysis



Rank	Property Name	Property Address	Location	Points
1	City of Davis Garage 1st and F	101 F Street, Davis CA	Downtown Davis	88.6
2	City of Davis Parking Lot E St	218 E Street, Davis CA	Downtown Davis	87.6
3	Amtrak	840 Second St	Downtown Davis	86.5
4	979 Olive Drive	979 Olive Drive	Downtown Davis	82.0
5	City of Davis Garage 4th and G	535 4th Street, Davis CA	Downtown Davis	80.5
6	Fire Department	530 Fifth Street	Downtown Davis	80.4
7	Central Park	Fifth & B Streets	Downtown Davis	80.3
8	City Hall	23 Russell Blvd.	Downtown Davis	76.2
9	Davis Joint Unified School Dist	526 B Street	Do Not Use	66.8
10	Davis Senior Center	646 A Street	Downtown Davis	66.4
11	Corp Yard	1818 Fifth Street	Downtown Davis	60.6
12	Oxford Park	505 Oxford Circle	West Davis	60.3
13	Public Works	1717 Fifth Street	Downtown Davis	58.8
14	Davis Community Gardens	1825 Fifth Street	Downtown Davis	58.8
15	Yolo Solano AQMD	1947 Galileo Court,	Do Not Use	58.6
16	Playfield Sports Park	2500 Research Park Drive	South Davis	55.7
17	Cedar Park	626 K Street	Downtown Davis	54.7
18	PG&E CNG station	1415 Second Street	Do Not Use	53.4
19	Nugget Market	629 Mace Blvd.	South Davis	48.9
20	Police	2600 Fifth Street	East Davis	48.8
21	Walnut Park	2709 Lillard Drive	South Davis	45.7
22	Community Park	203 Fourteenth Street	Downtown Davis	45.6
23	First 5	500 Mace	Do Not Use	45.7
24	Sutter Health	2000 Sutter Place	West Davis	44.4
25	John Barovetto Park	4400 Alhambra	East Davis	44.2
26	Pioneer Park	5035 Hamel Street	South Davis	43.9
27	Slide Hill Park	2850 Temple Drive	East Davis	42.5
28	Chestnut Park	1020 Chestnut Lane	Downtown Davis	42.0
29	Recology	1727 Second St	Do Not Use	39.5
30	Harvest Park	1701 Harvest Ave	North Davis	38.5
31	South Davis Library	1441 Danbury Street	South Davis	33.3
32	Sycamore Park	2315 Sycamore Ave	West Davis	33.1
33	West Manor Park	2910 Salem Ave	West Davis	33.2
34	Arroyo Park	2000 Shasta Drive	West Davis	33.2
35	Mace Ranch Park	3241 Fifth Street	East Davis	27.6
36	Manor Pool	2525 Tulip Lane	East Davis	24.1
37	Westwood Park	1011 Wanted Circle	West Davis	24.0
38	Northstar Park	3456 Anderson Road	North Davis	22.7
39	Market Park	3551 Cannery Loop	North Davis	22.6

The following sites were identified to continue to a feasibility study. Bold text indicates it was from the original list.

1. Amtrak Station
2. Central Park
3. 979 Olive Drive
4. City Hall/Davis Senior Center
5. Parking garage (4th & G)
6. Parking garage (1st & F)
7. E Street parking lot
8. Oxford Park
9. Public Works
10. Cedar Park
11. Davis Community Gardens
12. Davis Fleet/Parks
13. Police Station

The consultant team used a score sheet to evaluate the feasibility of each of the 13 sites, as shown Table 2.

Table 2: Site Evaluation Criteria

Criteria	Score Type
Parking spaces available	Pass/Fail
Site control	Pass/Fail
24/7	Pass/Fail
Safety	Numerical
Activities for DCFC	Numerical
Activities for Level 2	Numerical
Public restroom	Numerical
Lot configuration	Numerical
EV readiness	Numerical
Panel capacity	Numerical
Transformer capacity	Numerical
Ease of access to electrical	Numerical
Civil upgrades	Numerical
Signing and striping	Numerical
Distance between EVSE and transformer	Numerical

The first three are pass/fail—for example, locations that don't have public parking spaces failed and were not evaluated further.

The second set of criteria are about useability by the driver—is the location well-lit and visible, are appropriate amenities onsite or close by on a safe walking route?

The third set are about installation and help to identify the cost of installing charging stations at each site.

The consultant team recommend five sites in Table 3 and presented them to the City's Natural Resources Commission for public input and received comments from Cool Davis during the meeting.

Table 3: Draft Site Recommendations

Location	Existing	Proposed
City Hall	Two dumb pedestal mount Clipper Creek	Two smart dual-port Level 2 stations and one DCFC
4th & G Garage	Two dumb pedestal mount Clipper Creek	Two smart dual-port Level 2 stations (wall mount)
E Street Parking Lot	Two dumb pedestal mount Clipper Creek	Two smart dual-port Level 2 stations or one quad-port station
Amtrak	Two dumb pedestal mount charging stations	One dual-port DCFC
Olive Drive	Configured for a DCFC	One dual-port DCFC, potentially a high-speed 150kW charger

As a result of input, the consultant team added Central Park and H Street to the list of public sites to evaluate and contacted the owners of the privately owned retail properties and parking lots recommended. The surface parking lot suggested is too small to add charging stations and curbside charging on H Street does not have access to a City-owned meter. Private property owners didn't return calls and the consultant team couldn't obtain electric use data.

After physical inspections, the consultant team revised its recommendations as listed in Table 4.

Table 4: Revised Site Recommendations

Location	Existing	Proposed
City Hall	Two dumb pedestal mount Clipper Creek	Up to four smart dual-port Level 2 stations
4th & G Garage	Two dumb pedestal mount Clipper Creek	One or two smart dual-port Level 2 stations (wall mount)
E Street Parking Lot	Two dumb pedestal mount Clipper Creek	One smart dual-port Level 2 station
Amtrak	One dumb pedestal mount charging station	One dual-port DCFC and up to smart dual-port Level 2 stations, make ready for future mobility hub
Olive Drive	None	One dual-port DCFC, potentially a high-speed 150kW charger, and make-ready for additional EVSE
Central Park	None	Seek a grant for a future mobility hub and park/street update

ATTACHMENT 2

RESOLUTION NO. 22- ----, SERIES 2022

RESOLUTION AUTHORIZING THE CITY MANAGER TO NEGOTIATE AND EXECUTE AMENDMENT NO. 1 TO PROFESSIONAL SERVICES AGREEMENT WITH FRONTIER ENERGY, INC. FOR COMPLETION OF THE FLEET ELECTRIFICATION STUDY

WHEREAS, the City of Davis has demonstrated leadership in sustainability policy and implementation in California and has historically taken important actions to reduce greenhouse gas (GHG) emissions in our community, including long-term commitments to alternative transportation options; and

WHEREAS, the Davis City Council adopted the March 2019 Resolution of the Council Declaring a Climate Emergency and Proposing Mobilization Efforts to Restore a Safe Climate, including moving toward completely electrified transportation systems, encouraging active transportation (bicycling, walking and public transit) and accelerating the community carbon neutrality goal to 2040; and

WHEREAS, the City of Davis, in partnership with Valley Clean Energy (VCE), applied for and received a Sacramento Area Council of Governments (SACOG) 2018 Green Region grant award of $2,912,000 for regional collaboration in implementing electric vehicle charging infrastructure, called the 'Electrify Yolo' project, with partner agencies VCE, Yolo County and City of Woodland; and

WHEREAS, the City of Davis will act as fiduciary agent for regional partner implementation of each agency's SACOG Green Region funding and will separately implement the City's approximately $2 million share of the grant funding for electric vehicle charging infrastructure implementation; and

WHEREAS, the City of Davis has an executed Professional Services Agreement (PSA) with Frontier Energy, Inc., a Davis based firm, and subconsultant DKS Associates, in the amount of $200,000 to implement the Electric Vehicle (EV) Charging Infrastructure Phase 1 project; and

WHEREAS, the City of Davis has received a proposal from Frontier Energy to complete the Fleet Electrification Study project.

NOW THEREFORE BE IT RESOLVED that the City Council authorizes the City Manager to negotiate and execute the Amendment No. 1 to the Frontier Energy, Inc. PSA for the Fleet Electrification Study in the amount of $66,430, making the PSA total agreement not to exceed $266,430.

BE IT FURTHER RESOLVED that all terms, conditions, and covenants of said agreement be, and the same are hereby approved, ratified, and confirmed.

PASSED AND ADOPTED by the City Council of the City of Davis on this 28th day of June, 2022 by the following vote:

AYES:

NOES:

ABSENT:

Gloria Partida
Mayor

ATTEST:
Zoe S. Mirabile, CMC
City Clerk

Scope of Work for Fleet Transition Planning

7a. Fleet Inventory and Assessment

- Gather data about the City fleet via data transfer from asset management or telematics systems, if available, and then identify gaps. If needed, issue driver surveys, get odometer readings, or conduct individual department meetings.
- Work collaboratively with City staff and department heads as desired to evaluate vehicle use and suitability to task. If desired, the Frontier team can identify vehicles that appear to have low use and those that seem mismatched to the task so that City staff can make decisions about consolidating vehicles and right-sizing makes and models.
- Develop a one-to-one vehicle replacement plan based on the desired strategy: oldest vehicles first, greatest GHG reduction, best operational savings, regulatory compliance, etc. The plan is specific through 2025, and broader after 2025 to accommodate additional EV availability. For vehicles that are not feasible for EV transition, the team can recommend low- and zero-emission options like hydrogen fuel cells, low-NOx engines with renewable natural gas, and battery assist devices like power takeoffs (PTOs) and auxiliary power units (APUs) and, if needed, provide justifications that ACF may require.
    - Clearly address a strategy for ACF compliance and with the proposed changes to Advanced Clean Cars.
- Estimate EV replacement cost using an average cost for the class of EV before incentives and rebates, and then show incentives on a separate line to plan the budget more accurately.

7b. Determine Vehicle Energy Requirements and Charging Needs

Using the results of the fleet assessment plan, estimate vehicle electric loads and charging needs at domicile (overnight parking) locations:

- Extrapolate charging requirements, associated electrical loads, and charging infrastructure costs. This includes the City's existing and planned EVSE purchasing agreements and procurement contracts.
- Include total electrical capacity and existing available electrical infrastructure at each fleet domicile (panel capacity, conduit, capacity, etc.)
- Conduct site visits to verify information about electrical load capacity, parking configurations, and other potential site constraints to ensure that the analysis is consistent with actual on-the-ground conditions.
- Include other factors in consultation with the City that may include available electrical service capacity to serve each City-owned fleet facility, the fee structure of expanding electrical service per kWh, known fixed costs in supplying additional electrical service if projected loads from new chargers exceed capacity.
- Investigate approaches that can reduce charging capital and operating costs, like dynamic load management, charger sharing, mobile chargers and/or other technologies.

If desired, evaluate the potential and cost-effectiveness of resiliency strategies that include backup generators, distributed energy microgrids (solar and micro wind), and bidirectional charging including vehicle-to-vehicle (V2V), vehicle-to-building (V2B), and vehicle-to-grid (V2G) connectivity.

7c. Prepare Transition Plan

Create an interactive dashboard based on Microsoft's PowerBI data visualization platform that shows the annual transition plan for EVs and installation of infrastructure with estimated capital costs, total cost of ownership, and greenhouse gas reduction. The dashboard's website is password protected and will remain available throughout the project, and longer if the City finds it useful.

The Frontier team will also address barriers to fleet transition that may include availability of EVs suitable to fleet needs, difficulty in competing for incentives, the cost and delay of electrical upgrades, and the long lead time for procurement that doesn't align with municipal budgets. Throughout the project, we will present timely information about grant funding, and incentive and rebate opportunities.

The City will also receive spreadsheets and brief written reports with the cleaned data and recommendations.

7d. Phased Master Plan

Using the outputs from other tasks, the Frontier team will provide a roadmap for project implementation and identify the timeline for charger installation at each fleet facility. The roadmap will be based on projected EV industry trends, Davis's fleet vehicle replacement schedules, available incentives, and City budget constraints. The team will identify the number, type, and location of EV charging stations needed to support full fleet electrification and, if applicable, recommend alternatives that may include other fuels, like hydrogen or carbon-negative renewable natural gas. We'll also recommend an implementation strategy drawn from best practices in other cities.

The Master Plan can also include recommendations for:

- Backup systems that can provide resiliency for EV charging and mission-critical operations
- Software systems that can support data collection, reporting, and managing data collection
- Guidelines for charging station use, which may include sharing EVSEs with employees and public
- EV and charging station training for drivers and maintenance staff

DELIVERABLES

- Year-by-year procurement plan for vehicles and charging infrastructure, with recommendations based upon optimizing budget and/or goals in a climate action plan.
- Interactive digital dashboard that includes data downloads
- Summary of incentive and grant opportunities
- Phased master plan for implementation

Schedule of Rates/Payments

Consultant will invoice City on a monthly cycle, or otherwise as expressly provided in this Agreement. Consultant will include with each invoice a detailed progress report that indicates the amount of budget spent on each task, as applicable. Prior to undertaking any work outside of the existing scope, Consultant will inform City, detailing what additional work is recommended and the associated cost. No out-of-scope work shall be performed without express written permission from City. Any other terms and conditions relating to the amount of compensation to be paid to Consultant are as follows:

Tasks	Key Persons	Hourly Billing Rates	# of Hours	Labor Cost	Total Per Task
7a Fleet Inventory and Assessment	Thomas Paddon	150	95	$14,250	
	Chris White	245	9	$2,205	
	Mike Usen	260	5	$1,300	
	Gurbir Antaal	160	15	$2,400	
					$ 20,155
7b. Determine Vehicle Energy Requirements and Charging Needs	Thomas Paddon	150	15	$2,250	
	Chris White	245	4	$980	
	Mike Usen	260	21	$5,460	
	Gurbir Antaal	160	48	$7,680	
	Yilun Xu	220	14	$3,080	
					$ 19,450
7c. Prepare Transition Plan	Thomas Paddon	150	13	$1,950	
	Chris White	245	15	$3,675	
	Mike Usen	260	8	$2,080	
	Gurbir Antaal	160	4	$640	
	Yilun Xu	220	8	$1,760	
					$ 10,105
7d. Phased Master Plan	Thomas Paddon	150	26	$3,900	
	Chris White	245	28	$6,860	
	Mike Usen	260	10	$2,600	
	Gurbir Antaal	160	10	$1,600	
	Yilun Xu	220	8	$1,760	
					$ 16,720
		TOTAL LABOR			$ 66,430