AGREEMENT BETWEEN
CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY
AND
SUSTAINABLE SILICON VALLEY
FOR
OPTIMIZING URBAN TRAFFIC (OUT) IN MENLO PARK PILOT PROJECT

This Agreement entered this ____ day of _____, 2018, by and between the City/County Association of Governments of San Mateo County, a joint powers agency, hereinafter called "C/CAG" and Sustainable Silicon Valley. a 501(c)(3) nonprofit, hereinafter called "SSV" and referred to as "Contractor."

W I T N E S S E T H

WHEREAS, C/CAG is a joint powers agency formed for the purpose of preparation, adoption and monitoring of a variety of county-wide state-mandated plans; and

WHEREAS, C/CAG is the designated Congestion Management Agency responsible for the development and implementation of the Congestion Management Program for San Mateo County; and

WHEREAS SSV is a nonprofit organization that collaborates with leading technology companies, cities, counties, research and educational institutions to solve collectively solve sustainability issues; and

WHEREAS, C/CAG and SSV desire to work together along with other project partners not included in this funding agreement on the "Optimizing Urban Traffic" (OUT) in Menlo Park pilot project (PROJECT); and

WHEREAS, the OUT in Menlo Park project has been identified as an innovative application with potential to improve traffic operations and reduce greenhouse gas; and

WHEREAS, SSV is designated as the project lead with project participants including C/CAG, Caltrans, City of Menlo Park, Urban Integrated, and Kimley-Horn.

WHEREAS, C/CAG and SSV have agreed that the total cost for the PROJECT is estimated at $417,900; and

WHEREAS, C/CAG and SSV have agreed that CCAG will provide a cost-share of 56.64%, up to a maximum of $236,700; and

WHEREAS, C/CAG and SSV have agreed that SSV retain Urban Integrated (UI) to perform work as described in Exhibit A.

NOW, THEREFORE, IT IS HEREBY AGREED by the parties as follows:

1.   Services to be provided by Contractor. In consideration of the payments hereinafter set forth, Contractor agrees to perform the services described in Exhibit A, attached hereto (the "Services"). All Services are to be performed and completed by June 30, 2020.

2.   Payments. In consideration of Contractor providing the Services, C/CAG shall reimburse Contractor based on the project budget set forth in Exhibit B up to a maximum amount of two hundred thirty-six thousand seven hundred dollars ($236,700) for Services provided during the Contract Term as set forth below. Payments shall be made to Contractor monthly based on an invoice submitted by Contractor that identifies expenditures and describes services performed in accordance with the agreement. C/CAG shall have the right to receive, upon request, documentation substantiating charges billed to C/CAG.

3.   Relationship of the Parties. It is understood that Contractor is an Independent Contractor and this Agreement is not intended to, and shall not be construed to, create the relationship of agent, servant, employee, partnership, joint venture or association, or any other relationship whatsoever other than that of Independent Contractor.

4.   Non-Assignability. Contractor shall not assign this Agreement or any portion thereof to a third party.

5.   Contract Term. This Agreement shall be in effect as of _____ and shall terminate on June 30, 2020; provided, however, C/CAG may terminate this Agreement at any time for any reason by providing 30 days' notice to Contractor. Termination shall be effective on the date specified in the notice. In the event of termination under this paragraph, Contractor shall be paid for all Services provided to the date of termination.

6.   Hold Harmless/ Indemnity: Contractor shall indemnify and save harmless C/CAG, its agents, officers, and employees from all claims, suits or actions to the extent caused by the negligence, errors, acts or omissions of the Contractor, its agents, subcontractors, officers or employees related to or resulting from performance, or non-performance, under this Agreement.

      The duty to indemnify and save harmless as set forth herein shall include
      the duty to defend as set forth in Section 2778 of the California Civil Code.

7.   Insurance: Contractor or any subcontractors performing the services on behalf of Contractor shall not commence work under this Agreement until all Insurance required under this section has been obtained and such insurance has been approved by the C/CAG Staff. Contractor shall furnish the C/CAG Staff with Certificates of Insurance evidencing the required coverage and there shall be a specific contractual liability endorsement extending the Contractor's coverage to include the contractual liability assumed by the Contractor pursuant to this Agreement. These Certificates shall specify or be endorsed to provide that thirty (30) days notice must be given, in writing, to C/CAG of any pending change in the limits of liability or of non-renewal, cancellation, or modification of the policy. Such Insurance shall include at a minimum the following:

Workers' Compensation and Employer Liability Insurance: Contractor shall have in effect, during the entire life of this Agreement, Workers' Compensation and Employer Liability Insurance providing full statutory coverage.

Liability Insurance: Contractor shall take out and maintain during the life of this Agreement such Bodily Injury Liability and Property Damage Liability Insurance as shall protect C/CAG, its employees, officers and agents while performing work covered by this Agreement from any and all claims for damages for bodily injury, including accidental death, as well as any and all operations under this Agreement, whether such operations be by the Contractor or by any sub-contractor or by anyone directly or indirectly employed by either of them. Such insurance shall be combined single limit bodily injury and property damage for each occurrence and shall be not less than $1,000,000 unless another amount is specified below and shows approval by C/CAG Staff.

Required insurance shall include:

	Required Amount	Approval by C/CAG Staff if under $ 1,000,000
a. Comprehensive General Liability	$ 1,000,000	_____
b. Workers' Compensation	$ Statutory	_____

C/CAG and its officers, agents, employees and servants shall be named as additional insured on any such policies of insurance, which shall also contain a provision that the insurance afforded thereby to C/CAG, its officers, agents, employees and servants shall be primary insurance to the full limits of liability of the policy, and that if C/CAG, or its officers and employees have other insurance against a loss covered by such a policy, such other insurance shall be excess insurance only.

In the event of the breach of any provision of this section, or in the event any notice is received which indicates any required insurance coverage will be diminished or canceled, the C/CAG Chairperson, at his/her option, may, notwithstanding any other provision of this Agreement to the contrary, immediately declare a material breach of this Agreement and suspend all further work pursuant to this Agreement.

8.   Non-discrimination. The Contractor and any subcontractors performing the services on behalf of the Contractor shall not discriminate or permit discrimination against any person or group of persons on the basis of race, color, religion, national origin or ancestry, age, sex, sexual orientation, marital status, pregnancy, childbirth or related conditions, medical condition, mental or physical disability or veteran's status, or in any manner prohibited by federal, state or local laws.

9.   Compliance with All Laws. Contractor shall at all times comply with all applicable laws and regulations, including without limitation those regarding services to disabled persons, including any requirements of Section 504 of the Rehabilitation Act of 1973.

10. <u>Substitutions</u>: If particular people are identified in this Agreement are providing services under this Agreement, the Contractor will not assign others to work in their place without written permission from C/CAG. Any substitution shall be with a person of commensurate experience and knowledge.

11. <u>Sole Property of C/CAG</u>. Work products of Contractor which are delivered under this Agreement or which are developed, produced and paid for under this Agreement, shall be and become the property of C/CAG. Contractor shall not be liable for C/CAG's use, modification or re-use of products without Contractor's participation or for purpose other than those specifically intended pursuant to this Agreement.

12. <u>Access to Records</u>. C/CAG, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Agreement for the purpose of making audit, examination, excerpts, and transcriptions.

    The Contractor shall maintain all required records for three years after C/CAG makes final payments and all other pending matters are closed.

13. <u>Merger Clause</u>. This Agreement, including Exhibits A and B attached hereto and incorporated herein by reference, constitutes the sole agreement of the parties hereto with regard to the matters covered in this Agreement, and correctly states the rights, duties and obligations of each party as of the document's date. Any prior agreement, promises, negotiations or representations between the parties not expressly stated in this document are not binding. Any subsequent modifications must be in writing and signed by the parties. In the event of a conflict between the terms, conditions or specifications set forth herein and those in Exhibit A attached hereto, the terms, conditions or specifications set forth herein shall prevail.

14. <u>Governing Law</u>. This Agreement shall be governed by the laws of the State of California, without regard to its choice of law rules, and any suit or action initiated by either party shall be brought in the County of San Mateo, California.

15.   Notices. All notices hereby required under this agreement shall be in writing and delivered in person or sent by certified mail, postage prepaid and addressed as follows:

City/County Association of Governments of San Mateo County
555 County Center, 5th Floor
Redwood City, CA 94063
Attention: John Hoang

Notices required to be given to contractor shall be addressed as follows:

Sustainable Silicon Valley
1793 Lafayette Street, #210
Santa Clara, CA 95050
Attention: Jennifer Thompson

IN WITNESS WHEREOF, the parties hereto have affixed their hands on the day and year first above written.

Sustainable Silicon Valley (SSV) (Contractor)

By _____   _____
                                                                                                Date

City/County Association of Governments (C/CAG)

By _____   _____
     Maryann Moise Derwin, C/CAG Chair   Date

C/CAG Legal Counsel

By_____

"Optimizing Urban Traffic" in Menlo Park Pilot Project

Background
The C/CAG sponsored San Mateo County Smart Corridor (Smart Corridor) project is a joint effort by C/CAG and the California Department of Transportation (Caltrans) to address traffic congestion on local streets and major state routes in San Mateo County. The operation, management, and maintenance of the street, highway and freeway network are within the jurisdictional responsibilities of several cities as well as the County, Caltrans, and transportation agencies.

The Smart Corridor implements Intelligent Transportation System (ITS) equipment such as an interconnected traffic signal system, close circuit television (CCTV) cameras, trailblazer/arterial dynamic message signs, and vehicle detection system deployed on predefined designated local streets and state routes provide local cities and Caltrans day-to-day traffic management capabilities in addressing recurrent traffic congestion as well as provide Caltrans capabilities for managing the system during non-recurring traffic congestion cause by diverted traffic due to major incidents on the freeway.

The Smart Corridor deployed the new traffic signal control system known as KITS (Kimley-Horn Integrated Transportation System). Deployment of the KITS includes hardware and software as well as uploading of the Smart Corridor incident response plans into the signal controllers. KITS is a proprietary signal system developed by Kimley-Horn.

Building on the Smart Corridor and expanding on the Arterial Management and Traveler Information aspects is desirable.

Proposal Overview
The proposal covers three steps of measures that utilize the Smart Corridor infrastructure and adds more elements to optimize traffic flow in Menlo Park, applied to the part of the Menlo street network along Marsh Road (East of U.S. 101), Bayfront Expressway (between Marsh Road and University Avenue) and Willow Road (east of U.S. 101 to Bayfront Expressway. The project includes up to 14 intersections (14 traffic lights).

Work package 1: Smartphone based Traffic Light Assistant (TLA) App

The Smart Corridor infrastructure currently does not have the ability to provide individual guidance to drivers, bike riders or pedestrians, however, with new and emerging communication and computer technologies, a new layer of traffic management can provide individual drivers or pedestrians with real- time traffic information via smartphone apps. Recent research and commercial projects are building on navigation systems that have been common for quite some

time now to utilize real-time traffic information to further support the efficient movement of people through street networks.

The most important technology utilizing real-time traffic information is termed "traffic light assistance (TLA)." This gives individual drivers a prediction of the timing of a green light for each traffic light that they approach. Either available as a smartphone app or later integrated in the vehicles' dashboards, these TLA apps allow drivers to move more efficiently, with increased ease and peace of mind, while saving fuel. This is achieved by recommending an individually calculated speed based on the driver's distance to the signal and the signal's predicted phases, termed "GLOSA" or Green Light Optimized Speed Advisory.

C/CAG, Caltrans, and the City of Menlo Park seek to be at the forefront of this technology and serve as a national leader by partnering with Urban Integrated to develop a "Recommended Speed Assistance" app for the test area. The app will be based on Urban Integrated's preexisting suite of technology that includes UrbanPulse, TRAFFIC, and ECOMAT.

The benefits provided by the TLA App service are:
- It helps drivers ride efficiently, relax, save fuel
- Finally, if enough drivers are equipped, it results in smoother traffic, less noise, reduced air pollution
- It is the base to provide signal data to automotives and their ADAS systems

The proposed TLA App will be offered as a PoC for a pre-defined test community. The PoC will provide evidence on the quality of the provided data from the ITS and if this allows for the intended service. The pilot phase should be up to twelve months to determine if a productive version of the TLA App should be made available to the public. During the pilot phase, we will verify and negotiate the service level agreement that the ITS have to provide.

Work package 2 (Add-On to WP 1): Dashboard showing specific network indicators
Based on the platform and services implemented for the Traffic Light Assistant App, specific intelligence and dashboards can be added, to provide deep real-time knowledge about traffic in the signalized street network of Menlo park. The Output of this system covers estimations of capacity and other indicators that can only be provided by combining sensor data from the Smart Corridor System with moving data from vehicles in the network (FCD - Floating Car Data), and will be visualized in specifically designed dashboards.

Benefits will be:
- Knowledge about degree of saturation at all signals, risk of breakdown of traffic
- Incidents / blockings at traffic lights etc.
- The information allows to trigger management actions in the KITS system during normal and irregular traffic operation situations
- It fully utilizes the existing types of sensors, traffic signals and the potential of the KITS traffic management system in the area of the City of Menlo Park to optimize urban traffic

The dashboard will be based on Urban Integrated COCKPIT and UrbanPulse. We assume to

receive the data stream at the expected quality as defined in Work package 1.

Work package 3 (Add-On to WP 2): Specific services and apps
Having all relevant data processed, additional services for citizens and specific interest groups can be implemented easily:

A "Citizen app" can be established that provides relevant traffic information as open data, to inform Menlo Park citizens about traffic and to raise their awareness about their responsibility with regard to traffic in their city.

Dedicated services for companies located in Menlo Park can be designed and offered, either to support their commuters or to help them improve their logistic activities in the community area. These services should be discussed individually with the possible companies in workshop processes.

The outcome of Work package 3 is a consumption model, which allows third parties to use the data either via an App or as a smart service to be consumed by other systems such as logistics and routing systems or navigation systems, to name some examples.

BUDGET

Work package 1: Smartphone based Traffic Light Assistant (TLA) App

Assumptions
- UrbanPulse platform connector to the KITS system is already developed and is deployed within smartTA (East Palo Alto project), able to consume real-time traffic light and sensor data and to talk to traffic lights
- Traffic lights along Bayfront Expressway from University Avenue to Marsh Road and Willow Rd to U.S. 101 (9 Traffic Lights) plus one new signal at Facebook campus
- One-year operation as pilot project, then decision about continuation and extension to other parts of San Mateo County

Working steps and estimated costs

Phase / Activity	Responsible	Estimated costs funded by
Platform: design, deployment, connectors, processing of KITS data UI will provide in-kind contribution based on smartTA and contribution from the UI development team matching the reduced license fee (List Price: $ 118,250)	UI (Urban Integrated)	CCAG: $50,000 UI: $50,000 (in-kind)
Solution UI TRAFFIC: Preparing street network and configuration for up to 10 traffic lights (controller and geo-spatial data), verify signal prediction algorithm UI will waive the UI TRAFFIC license considering the relationship to smartTA and in addition provide in-kind services matching the service fees paid by CCAG.	UI	CCAG: $ 10,000 UI: $ 10,000 (in-kind)
ECOMAT TLA app / service: Adapt the app to local needs and safety requirements, testing and approval with trial users, preparing the roll-out to an extended user group UI will provide the UI ECOMAT base App as in-kind. CCAG and UI co-invest into the local adaption including the local safety requirements.	UI	CCAG: $ 16,500 UI: $ 35,000 (in-kind)

Trial preparation: Define impact measurement criteria based on automatically collected data, win >= 200 drivers in three groups to participate, do mailings, events, signing-up process, other driver related PR, SSV will manage the trial preparation.	SSV (Sustainable Silicon Valley)	CCAG: $40,000
Trial (12 months): Deploy platform, solution and app/service, TLA technical customer support, bug fixes, data collection, online support for drivers UI will provide deployment and technical support as in-kind. CCAG will pay for the online support of test drivers.	UI SSV	CCAG: $ 10,800 UI: $ 10,800 (in-kind)
Evaluation: Verify effectiveness and positive impact based on automatically collected data, by interviewing drivers. Write a report. UI will provide technical authoring of parts of the report.	SSV	UI: $ 5,000 (in-kind) SSV: $5,000 (in-kind)
Other: Project management, customer relationship, networking, disseminate project findings, etc. SSV to manage the project.	SSV	CCAG: $30,000
Total of Work package 1		**CCAG: $ 157,300** **UI: $ 110,800 (in-kind)** **SSV: $5,000 (in-kind)**

Work package 2: Dashboard showing specific network indicators

Assumptions
- Based on work package 1

Working steps and estimated costs

Phase / Activity	Responsible	Estimated costs funded by
Traffic state estimation model: Add connectors to new data sources (e.g. radar sensors, floating car data), design, build, calibrate the model We assume up to three connectors of standard complexity. If the project will require more or connectors will be unexpectedly more complicate we will revise this effort.	UI	CCAG: $ 14,850 UI: $ 14,850 (in-kind)
Interface to KITS: Provide traffic model data to the KITS system UI and CCAG will co-invest into the outbound worker of the platform to serve the KITS system. UI will invest in the general part and CCAG in the local adaption.	UI	CCAG: $ 9,900 UI: $ 9,900 (in-kind)
Cockpit (show most important results) Design tiles and indicators (incl. Workshops with Menlo Park / San Mateo County), implement The UI COCKPIT license will be waived during the pilot phase. CCAG and UI will co-invest into the (adaption of the) tiles fitting the needs of CCAG and related stakeholders.	UI	CCAG: $ 14,850 UI: $ 14,850 (in-kind)
Operate the cockpit until end of pilot project UI waives the operational fee during the pilot.	UI	UI: $ 6,000 (in-kind)
Other: Project management, customer relationship, networking, disseminate project findings, etc. SSV to manage the project part.	SSV	CCAG: $20,000
Total Work package 2		**CCAG: $ 59,600** **UI: $ 45,600 (in-kind)**

Work package 3 (Add-On to WP 2): Specific services and apps

Assumptions:
- Based on work packages 1 and 2
- Having all relevant data processed, additional services for citizens and specific interest groups can be implemented easily:
- A "Citizen app" can be established that provides relevant traffic information as open data, to inform Menlo Park citizens about traffic and to raise their awareness about their responsibility with regard to traffic in their city.

Working steps and estimated costs

Phase / Activity	Responsible	Estimated costs
Cockpit (responsive web page): Show street network, color sections according to traffic state, provide open data interface to download basic traffic indicators for network sections CCAG and UI will co-invest into the development of the local cockpit to extend the features towards more citizen focused services.	UI	CCAG: $ 19,800 UI: $ 19,800 (in-kind)
More applications to be discussed individually. The platform allows third parties to add applications and services on-top of the existing solution and platform. We can envision Smart Parking services (e.g. by CleverCiti and/or Continental Parkpocket) or Environmental services (e.g. together with SSV and BAAQD).		TBD
Other: Project management, customer relationship, networking, disseminate project finding, etc.	SSV	TBD

Grand Total

Work Package	Duration / Period	Responsible	Estimated costs
1	12 Months (Month 1 – month 12)	SSV	CCAG: $ 157,300 UI: $ 110,800 (in-kind)
2	9 Months (Month 4 – month 12)	SSV	CCAG $ 59,600 UI: $ 45,600 (in-kind)
3	6 Months (Month 7 – month 12)	UI	CCAG: $ 19,800 UI: $ 19,800 (in-kind)
Grand Total			**CCAG: $ 236,700** **SSV: $5,000 (in-kind)** **UI: $ 176,200 (in-kind)** **TOTAL: $417,900**