DATE: March 14, 2023

TO: Mayor and Council Members

FROM: Public Works Department

SUBJECT: Memorandum of Understanding for Demonstration of Underground Utility Search and Cavity Detection

RECOMMENDATION:
It is recommended that the Mayor and Council Members approve a Memorandum of Understanding (MOU) for the demonstration of underground utility search and cavity detection using ground penetrating radar & 3D mapping technology performed by Geo Search Inc. for “no fee”.

BACKGROUND:
Geo Search Inc. is a newly established Japanese company in the USA. It is offering the City of Inglewood (City) a “no fee” service to demonstrate its technology using ground penetrating radar to search existing utilities (up to a depth of five feet) and detect subsurface cavities. Proactive detection of unseen cavities may help mitigate road cavity accidents. The technology can do 3D mapping at traffic driving speed (up to 60 mph) using car-mounted equipment during the first survey. If a possible cavity is detected inside the traffic control zone area, a second survey will be conducted using “hand-push” equipment for more accurate data & mapping. Per its success in Japan, Geo Search Inc. has an accuracy rate of approximately 90% in cavity detection.

On September 1, 2022, Public Works staff received a request for a meeting for the demonstration of underground utility search and cavity detection by Geo Search Inc.

On September 8, 2022, a presentation was given by Geo Search Inc. at Public Works Department.

On October 11, 2022, after discussion, the MOU was presented to the City for performing this demonstration on City streets.

DISCUSSION:
The City currently has a water service area covering approximately 4,600 acres within its corporate boundaries. The City's water system infrastructure includes approximately 152 miles of pipeline varying in diameter from three (3) inches to thirty (30) inches.

Public Works staff would like Geo Search Inc. to perform the underground utility search and cavity detection at some locations (specified in the MOU Exhibit “A”) in the City of Inglewood. In order to receive this demonstration of underground utility search and cavity detection at “no fee,” Public Works staff recommends that the Mayor and Council Members approve the MOU.
FINANCIAL/FUNDING ISSUES AND SOURCES:
None.

DESCRIPTION OF ANY ATTACHMENTS:
Attachment No. 1: MOU with City-required Insurance
Attachment No. 2: Geo Search Inc. PowerPoint Presentation

PREPARED BY:
Thomas C. Lee, P.E., Principal Engineer-Water Resources
Rae Aldridge, Management Assistant to the Director

COUNCIL PRESENTER:
Louis A. Atwell, P.E., Assistant City Manager/PW Director
APPROVAL VERIFICATION SHEET

DEPARTMENT HEAD/
ASSISTANT CITY MANAGER APPROVAL:  
Louis A. Atwell, PW Director/Asst. City Mgr.

CITY MANAGER APPROVAL:  
Artie Fields, City Manager
ATTACHMENT NO. 1

MEMORANDUM OF UNDERSTANDING
BETWEEN THE CITY OF INGLEWOOD AND
GEO SEARCH INC.
MEMORANDUM OF UNDERSTANDING
BY AND BETWEEN THE CITY OF INGLEWOOD AND
GEO SEARCH INC.

This Memorandum of Understanding ("MOU"), entered into as of __________ ("Execution Date"), by and between the City of Inglewood, a municipal corporation and charter city ("City"), 1 W. Manchester Boulevard, Inglewood, California 90301 and GEO SEARCH INC. ("GS"), 26 Corporate Plaza, Newport Beach, California 92660.

RECITALS

A. Whereas, GEO SEARCH INC. ("GS") is a California Corporation, entity no. 4848396.
B. Whereas, GS provides a subsurface cavity detection service which, through proactive detection of unseen cavities, may help mitigate road sinkhole accidents.
C. Whereas, GS provides the cavity detection service using a purpose-made vehicle mounted ground penetrating radar ("GPR"), which minimizes the impacts of surveys on traffic flow and the environment.
D. City and GS desire to enter into this MOU to conduct a pilot study ("the Pilot") to verify the effectiveness of the cavity detection system provided by GS within the City of Inglewood, and with the cooperation of the City’s Public Works Department.

TERMS OF MOU

I. MOU Timeframe

The term of this MOU shall begin on the Execution Date and shall terminate on June 30, 2024, unless terminated earlier at either party’s option, with or without cause, by providing ten (10) days written notice to the other party.

II. Scope of the Study

The scope of the study includes, but not limited to, (i) preparation, (ii) primary survey, (iii) data analysis, (iv) secondary survey, (v) presentation of outputs, and (vi) evaluation, as more specifically described in Exhibit "A". All services performed by GS under this MOU are provided free of charge to the City. Furthermore, GS understands and agrees that by entering into this MOU the City is not obligated to hire GS to perform similar services in the future. If the City desires subsurface cavity detection services not covered under this MOU, the City
will follow its competitive procurement procedures to hire a contractor and GS shall not be entitled to any competitive advantage in the procurement process.

III. License Granted to City
Any information, data, or results generated from the Pilot (collectively, the "Data") shall be owned by GS; however, GS shall provide a copy of all Data to the City at no cost and City shall be automatically deemed to have a non-exclusive license to use the Data for City's own purposes. The license granted herein shall survive termination of this MOU.

The City is a public agency subject to the disclosure requirements of the California Public Record Act “CPRA”. If GS’s proprietary information is contained in the Data provided to the City and GS claims that such proprietary information falls within one or more CRPA exemptions, GS must clearly mark such information “CONFIDENTIAL AND PROPRIETARY,” and identify the specific lines containing the proprietary information and the statutory exemption. In the event of a request for such information, the City will make best efforts to provide notice to GS prior to such disclosure. If GS contends that any Data is exempt from the CPRA and wishes to prevent disclosure, it is required to obtain a protective order, injunctive relief or other appropriate remedy from a court of law, at GS's sole cost, before the City is required to respond to the CRPA. If GS fails to obtain such remedy within the time the City is required to respond to the CPRA request, the City may disclose the requested information. GS further agrees that it shall defend, indemnify, and hold harmless the City against any claim, action or litigation (including but not limited to all judgments, costs, fees, and attorney's fees) that may result from denial by City of a CPRA request for information arising from any representation, or any action or inaction by GS. This paragraph shall survive termination of this MOU.

IV. Requirements for Permits
GS understands, acknowledges, and agrees that any required permits by the Inglewood Municipal Code to operate in the public right-of-way shall be obtained, including, without limitation, excavation, videotaping, and/or traffic control permits. City will assist GS with permits.

V. Indemnity
a) GS agrees to defend, indemnify, and hold harmless the City, its officials, officers, employees, and volunteers (collectively, “City”) from and against any and all liability, claims, demands, damages, or costs, including but not limited to attorney’s fees, or
payments for injury to any person or property (collectively, "Losses") caused or claimed to be caused by the act, errors, and/or omissions of GS or GS's employees, agents, officers, and subconsultants. GS's responsibilities under this subparagraph (a) include liability arising from, connected with, caused by, or claimed to be caused by the active or passive negligent acts or omissions of the City, which may be in combination with the acts or omissions of GS, its employees, agents or officers, or subconsultants; provided, however, that GS's duty to defend, indemnify, protect and hold harmless shall not include any Losses arising from the sole negligence or willful misconduct of the City. Notwithstanding GS's obligation to defend City hereunder, City has the right to conduct its own defense and seek reimbursement for reasonable costs of defense from GS's, if City chooses to do so.

b) GS agrees to pay any and all costs the City incurs enforcing the indemnity, defense and hold harmless provisions set forth in subparagraph (a), above.

c) The provisions in Section V shall survive termination of this MOU.

VI. Miscellaneous

a) Notices. All notices, demands, requests or approvals to be given under this MOU must be in writing and will be deemed served when delivered personally, or on the third business day after deposit in the United States mail, postage prepaid, registered, or certified, addressed as follows:

All notices, demands, requests or approvals to the City:

Public Works Department
Attention: Mr. Louis A. Atwell
1 West Manchester Boulevard, 3rd Floor
Inglewood, California 90301

With copies to:
Inglewood City Attorney’s Office
1 West Manchester Boulevard, 8th Floor
Inglewood, California 90301
Inglewood City Clerk’s Office  
1 West Manchester Boulevard, 1st Floor  
Inglewood, California 90301  

All notices, demands, requests or approvals to GS:  

GEO SEARCH INC.  
26 Corporate Plaza, Suite 150  
Newport Beach, CA 92660  
Attention: Yukio Gotoh, President and CEO  
Email: y-gotoh@geosearch.co.jp  

Agent for Service of Process:  

C T Corporation System for Geo Search Inc.  
330 N. Brand Boulevard, Suite 700  
Glendale, CA 91203  

b) Independent Parties. Both parties to this MOU will be acting in an independent capacity and not as agents, employees, partners, or joint ventures of one another. Neither the City nor its officers or employees will have any control over the conduct of GS or any of GS’s agents, employees, or subconsultants, except as otherwise provided in this MOU.  

c) Integrated Contract. This MOU represents the full and complete understanding of every kind or nature whatsoever between the parties. Any preliminary negotiations and agreements of any kind or nature are merged into this MOU. No oral agreement or implied covenant may be held to vary the provisions of this MOU. This MOU may be modified only by written agreement signed by City and GS and approved as to form by the City Attorney.  

d) Insurance. Prior to entering upon City Property, GS must procure, maintain, and pay for insurance against claims for injuries to persons or damage to property that may arise from or in connection with the performance of this MOU by GS or GS’s agents, representatives, employees or subconsultants for the duration of this MOU. GS must obtain insurance that, at a minimum, meets the requirements for insurance set forth in Exhibit “B”, Insurance Requirements and Verifications.
e) **Prohibition against Transfers.** GS may not assign, hypothecate, or transfer this MOU or any interest therein directly or indirectly, by operation of law or otherwise without the prior written consent of City. Any attempt to do so without the City’s consent will be null and void, and any assignee, hypothecate or transferee acquires no right or interest by reason of such attempted assignment, hypothecation or transfer.

f) **Waiver.** A waiver of any breach of this MOU may not be deemed a waiver of any subsequent breach of the same or any other term, covenant, or condition of this MOU.

g) **Compliance with Law.** GS must comply with all laws of the State of California and the United States, and all ordinances, rules and regulations enacted or issued by City. GS is hereby informed of the requirements of California Labor Code section 1720 et seq., and 1770 et seq., as well as California Code of Regulations, Title 8, section 16000 et seq., (Prevailing Wage Laws), which require the payment of prevailing wage rates and the performance of other requirements on “public works” and “maintenance” projects. If the services herein are subject to Prevailing Wage Laws, GS agrees to fully comply with such laws.

h) **Discrimination.** GS shall not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or veteran or military status, or any other legally protected class as defined in Government Code section 12940.

i) **Nuisance.** GS may not maintain, commit, or permit the maintenance or commission of any nuisance in connection with this MOU.

j) **Governing Law.** This MOU shall be interpreted, construed, and governed according to the laws of the State of California.

k) **Venue and Jurisdiction.** In the event of litigation between the Parties, venue in state trial courts shall lie exclusively in the County of Los Angeles, Superior Court, Southwest District, located at 825 Maple Avenue, Torrance, California 90503-5058. In the event of litigation in the United States District Court, venue shall lie exclusively in the Central District of California, in Los Angeles.
l) Survival of Provisions and Obligations. Any provision of this MOU, which by its nature must be exercised after termination of this MOU, will survive termination and remain effective for one year. Any obligation that accrued prior to termination of this MOU will survive termination of this MOU.

m) Exhibits. The following exhibits are incorporated by reference into this Contract as though fully set forth herein.

Exhibit “A” Scope of the Pilot
Exhibit “B” Insurance Requirements and Verifications

n) Counterpart Signatures. This MOU may be executed in any number of counterparts, each of which shall be an original, but all of which together shall comprise one and the same instrument. Any signature page counterpart executed and delivered by a party by means of facsimile transmission or electronic mail as a PDF file shall be deemed for all purposes of this MOU as an original counterpart.

In witness whereof, the parties have caused this MOU to be executed the day and year first above written.

CITY OF INGLEWOOD

By: ____________________________
James T. Butts, Jr.
Mayor

GEO SEARCH INC.

By: ____________________________
Yukio Gotoh
President and CEO

ATTEST:

By: ____________________________
Aisha L. Thompson
Inglewood City Clerk

APPROVED AS TO FORM:

By: ____________________________
Kenneth R. Campos
Inglewood City Attorney
Exhibit “A”

SCOPE OF THE PILOT

1 Description of the project
GS provides a subsurface cavity detection service which, through proactive detection of unseen cavities, may help mitigate road sinkhole accidents. GS provides the service using a purpose made vehicle-mounted ground penetrating radar (GPR), which minimizes the impacts of surveys on traffic flow and the environment.

2 Selection of Survey Roads
In cooperation with GS, Inglewood designates the roads to be surveyed with total lane-length of approximately 10 miles. The roads designated for this pilot project are to be selected based upon the following criteria.

Cavity detection produces the most valuable results when conducted on important roads since the data results would be significant information for the actual maintenance plan pursued by Inglewood. “Important roads” here mean:

- Roads at risk of cave-in:
  - Sinkholes occurred in the past
  - The underground space is intensively utilized
  - The underground infrastructure is aged

- Roads where the occurrence of a sinkhole would have significant impact on:
  - Access roads to the socially important facilities (hospital, fire department, school etc.)
  - Heavy traffic roads

3 Setup of equipment for primary survey (conducted by GS.)
Primary Survey: Subsurface data is collected down to approximately 1.5 meter (5 feet) deep by the special survey vehicle mounted with the GPR survey system. (See Figure 1). No traffic restrictions are required while surveying on roads, as the vehicle can scan at regular traffic speeds. GS will ensure that the driver of the special survey vehicle holds a valid California Driver’s License for the operation of the vehicle and that the vehicle meets the requirements of the California Vehicle Code to operate on public streets.
4 Data analysis

**Interpretation of the GPR data**: Expert GS analysts interpret the GPR data and pick up anomaly signals as potential subsurface cavities, which will be thicker than 0.1 meter (0.4 feet) and wider than 0.5 meter (1.7 feet) by 0.5 meter (1.7 feet), using proprietary GS software (see Figure 2). The horizontal size and depth of each potential cavity are evaluated together with its location.

(Note) Our performance records in Japan show that approximately 90% of the anomaly signals detected are subsurface cavities.

5 Secondary survey

The purpose of the secondary survey, in general, is to confirm the existence of a cavity and obtain the information inside the cavity for next steps. The purpose of the secondary survey in the pilot study is to verify the accuracy of the GPR survey in City.

(Note) As the GPR survey process has become increasingly accurate over time, in Japan road repairs are often ordered without the necessity of a secondary survey process.

GS proposes locations of secondary survey, and City selects several locations. City and GS together conduct secondary survey with the following steps.

- Step 1: Traffic control is in place on site. (City)
- Step 2: A cavity is located with a handy GPR. Then, the drilling point is determined. (GS, Figure 3)
- Step 3: Drilling is carried out down to the anomaly depth. (GS, Figure 4)
- Step 4: Depth to the top of the cavity and thickness of the cavity are measured. (GS)
- Step 5: A 360-degree camera is inserted to observe the subsurface cavity. (GS, Figure 5)
- Step 6: The borehole is backfilled temporarily. (City)

The cause of cavity occurrence can often be identified through this process.

6 Presentation of outputs by GS

The following outputs are provided as results of the primary and secondary surveys.

- Map data that includes the information of the surveyed roads and detected cavities.
- The point data of each cavity that includes the results of primary and secondary survey.

These outputs are created by GS. It is possible to accumulate not only the results of the survey, but also City's response to a detected cavity, or repair record, as well as the cause of the cavity.

(Note) Data structure will be decided through collaborative discussion between City and GS.
7 Evaluation
City evaluates the effectiveness of the survey.

8 Sharing roles
City agrees to commit to the following activities. In other respects, GS covers the cost of the pilot study.
1) Selection of survey roads and points.
2) Preparation and implementation of traffic regulations for secondary survey and applications for related agencies that may require notification or may need to issue permission.
3) Introduction and covering cost of boring or excavation by City’s crew for secondary survey.
4) Provision of statistical information for evaluation.

9 List of Roads to be surveyed in Inglewood
1. Florence Avenue between La Brea Avenue to Centinela Avenue:
   (Northern 3 lanes x 2,500 feet [or 762 meters]) = 1.43 lane-mile.
2. Eucalyptus Avenue between Beach Avenue and West Plymouth Street:
   (2 lanes x 2,150 feet [or 656 meters]) = 0.82 lane-mile.
3. Arbor Vitae Street between Prairie Avenue and La Brea Avenue:
   (2 lanes x 2650 feet [or 808 meters]) = 1.01 lane-miles.
4. Arbor Vitae Street between La Brea Avenue and Ash Avenue:
   (4 lanes x 4700 feet [or 1.43 kilometers]) = 3.57 lane-miles.
5. Prairie Avenue between Manchester Boulevard and Pinca Drive:
   (7 lanes x 1200 feet [or 365 meters]) = 1.60 lane-miles.
6. On Hardy Street going West to East at the intersection Hardy Street and La Brea Avenue:
   (4 lanes x 140 feet [or 365 meters]) = 0.11 lane-miles.

10 Utility Mapping
GS may elect to provide up to consecutive 5,000 square feet of utility mapping.
City shall select the location and provide temporary traffic control. Utility mapping would assist City in future pipeline design projects to coordinate existing and proposed utilities.
Figure 1

![Diagram with labeled components: Road Surface Camera, GNSS Antenna, Ground Penetrating Radar]

Equipment Specification

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<td>Scanning speed</td>
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<td>Detectable cavity size</td>
<td>Area: 1.7ft *1.7ft</td>
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<td>Thickness: 0.4ft</td>
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Figure 2

![Images of horizontal and vertical slices]
Exhibit "B"

INSURANCE REQUIREMENTS AND VERIFICATIONS

MOU Insurance Requirements

GS shall procure and maintain for the duration of the MOU, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by GS, its agents, representatives, employees, or subcontractors. The cost of such insurance shall be borne by GS.

MINIMUM SCOPE AND LIMITS OF INSURANCE

Coverage shall be at least as broad as:

1. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than $2,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

2. Automobile Liability: Insurance Services Office Form CA 00 01 covering Code 1 (any auto), or if GS has no owned autos, Code 8 (hired) and Code 9 (non-owned), with limits of no less than $2,000,000 per accident for bodily injury and property damage.

3. Workers' Compensation: Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employers' Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

4. Professional Liability (Errors and Omissions): Insurance appropriate to GS's profession, with limit no less than $2,000,000 per occurrence or claim, $4,000,000 aggregate. (If applicable)

If GS maintains broader coverage and/or higher limits than the minimums shown above, the City requires and shall be entitled to the broader coverage and/or higher limits maintained by GS. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:
**Additional Insured Status:** The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of GS including materials, parts or equipment furnished in connection with such work or operations. CGL coverage can be provided in the form of an endorsement to GS's insurance (at least as broad as ISO Form CG 20 10 11 85, or if not available, through the addition of a combination of (1) CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **and** (2) CG 20 37 forms if later revisions used).

**Primary Coverage:** For any claims related to this MOU, GS's insurance shall be primary coverage at least as broad as ISO Form CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be in excess of GS's insurance and shall not contribute with it.

**Notice of Cancellation:** Each insurance policy required herein shall state that coverage shall not be cancelled except with notice to City.

**Waiver of Subrogation:** GS hereby grants to City a waiver of any right of subrogation which any insurer of GS may acquire against City by virtue of payment of any loss. GS agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not City has received a waiver of subrogation endorsement from the insurer.

**Self-Insured Retentions**
Self-insured retentions must be declared to and approved by the City. The City may require GS to purchase coverage with a lower retention or provide satisfactory proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

**Acceptability of Insurers**
Insurance is to be placed with insurers authorized to conduct business in California with a current A.M. Best rating of no less than A:VII, unless otherwise acceptable to City.

**Claims Made Policies (Professional Liability Only)**
If any of the required policies provide claims-made coverage:

1. The Retroactive Date must be shown, and must be before the date of the contract
or the beginning of contract work.

2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract work.

3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, GS must purchase “extended reporting” coverage for a minimum of five (5) years after completion of work.

**Verification of Coverage**

GS shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage provided by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the GS's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including the endorsements required herein, at any time.

**Special Risks or Circumstances**

City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

**Failure to Maintain Insurance Coverage**

If GS, for any reason, fails to maintain insurance coverage which is required pursuant to this Agreement, the same shall be deemed a material breach of contract. City, at its sole option, may terminate this Agreement and obtain damages from the GS resulting from said breach.

**Subcontractors**

GS shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein. All exceptions must be approved in writing by the City Attorney.
CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Nakazawa Insurance Services
1965 W 190th Street Ste 101
Torrance CA 90504

CONTACT NAME: Toshiya Nakamura
PHONE: NA Ext. 310-771-1500
FAX: NA Ext. 868-219-4722
EMAIL: nakamura@nlsv.net

INSURED
GEO SEARCH, Inc.
26 Corporate Plaza Suite 150
Newport Beach CA 92660

CONTACT NAME: NA
PHONE: NA Ext. 310-771-1500
FAX: NA Ext. 868-219-4722
EMAIL: NA

INSURER(S) AFFORDING COVERAGE

TOKIO MARINE AMERICA INC.
TOKIO MARINE AMERICA INC.

DATE (MM/DD/YYYY)
02/02/2023

CERTIFICATE NUMBER: 2033514248
REVISION NUMBER:

COVERAGE

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

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</table>

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The City of Inglewood, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the named insured including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the named insured. This CGL insurance coverage shall be primary and non-contributory.

CERTIFICATE HOLDER
City of Inglewood
City Attorney's Office

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 29 (2016/03) The ACORD name and logo are registered marks of ACORD
THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – AUTOMATIC STATUS WHEN REQUIRED IN CONTRACT OR AGREEMENT (OTHER THAN CONSTRUCTION)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured any person or organization when you and such person or organization have agreed in writing in a contract, agreement, or permit, that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured or in connection with your premises rented to you.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law;
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured; and
3. Only applies to "occurrences" or coverages not otherwise excluded under this policy.

B. Status as an additional insured for the person or organization to which this endorsement applies:

1. Commences during the policy period and after such written contract, written agreement or written permit has been executed; and
2. Ends when:
   a. Your ongoing operations for that additional insured are completed; or
   b. The lease of premises expires, or
   c. This policy is cancelled or otherwise terminates,

whichever occurs first.

C. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:
   a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
   b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization.
D. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement you have entered into with the additional insured; or

2. Available under the applicable Limits of Insurance shown in the Declarations, whichever is less.

This endorsement will not increase the applicable Limits of Insurance shown in the Declarations.
THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the Other Insurance Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.
**Business Search**

The California Business Search provides access to available information for corporations, limited liability companies and limited partnerships of record with the California Secretary of State, with free PDF copies of over 17 million image business entity documents, including the most recent image Statements of Information filed for Corporations and Limited Liability Companies.

Currently, information for Limited Liability Partnerships (LLPs), limited liability companies, and limited partnerships is not available in the California Business Search. If you wish to obtain information about LLPs and LPs, submit a Business Entity Order paper form to request copies of filings for these entity types. Note: This search is not intended to serve as a name reservation service. To reserve an entity name, select Forms on the left panel and select Entity Name Reservation?

**Basic Search**

- A basic search can be performed using an entity name or entity number. When conducting a search by entity or entity number, where applicable, remove "LLC" from the entity number; i.e., a basic search will search only ACTIVE entities; i.e., corporations, limited liability companies, limited partnerships, Cooperatives, Farmer Cooperatives, Foreign Firms, Foreign Limited Partnerships, unincorporated common interest developments, and any other entity not being conducted as a anonymous keyword search. The Advanced search allows for a filter with filter. To search entities that have a status other than active or to refine search criteria, use the Advanced search feature.

**Advanced Search**

- An Advanced search is required when searching for publicly traded disclosure information or a status other than active.

**Disclaimer**: Search results are limited to the 500 entities closest matching the entered search criteria. If your desired search result is not found within the 500 entities provided, please refine the search criteria using the Advanced search feature for additional results. The California Business Search is updated as documents are approved. The data provided is not a complete or certified record.

Although every attempt has been made to ensure that the information contained in the database is accurate, the Secretary of State's office is not responsible for any loss, consequence, or damage resulting directly or indirectly from reliance on the accuracy, reliability, or completeness of the information that is provided. All such information is provided "as is." To order certified copies or certificates of existence, (1) log onto our website using the "Order Request Certificate" in the right-hand drawer; and (2) complete your request online.

<table>
<thead>
<tr>
<th>Entity Information</th>
<th>Initial Filing Date</th>
<th>Status</th>
<th>Entity Type</th>
<th>Formed In</th>
<th>Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO SEARCH INC.</td>
<td>02/11/2022</td>
<td>Active</td>
<td>Stock Corporation - CA - General</td>
<td>CALIFORNIA</td>
<td>C.T. CORPORATION SYSTEM</td>
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</tbody>
</table>
ATTACHMENT NO. 2

PowerPoint slides for demonstration of underground utility search and cavity detection
Sinkhole prevention & Utility mapping

September 8, 2022

GEO SEARCH Inc.
GEO SEARCH Co., Ltd.

Agenda

1. About GEO SEARCH
2. Our services (Sinkhole prevention and 3D Utility mapping)
3. Demonstration surveys
4. Survey methods
5. Selection of survey sites
6. Traffic control
7. Output images
8. Other items
About GEO SEARCH

• GEO SEARCH Co., Ltd. (JPN): Established in 1989
• GEO SEARCH Inc. (USA): Established in 2022

• Surveyed: 160,000 miles of road lanes and discovered 115,124 cavities.
  (As of the end of March 2022)

• High Reliability: accuracy rate of cavity detection is 88.7%.
  (Our survey results between 2017 and 2019 have shown)
Sinkhole prevention

Road Sinkholes around the World
Road Sinkholes in the US

L.A. to pay $4 million to end lawsuit by woman whose car plunged into sinkhole

$15M Settlement Reached in 2016 San Antonio Sinkhole Death

Subsurface cavity detection
Primary survey
Secondary Survey: Process

1. Traffic Control
2. Hand-Type Radar Survey
3. Boring
4. Marking
5. Backfilling of borehole
6. 360° Camera Survey

Secondary Survey for Verification

Boring at detected points and camera survey inside the cavity

- Camera
- Cavity
- Borehole picture of the Cavity
- Asphalt Concrete
- Sutbase
- 32 in.
- Thickness the Cavity
- Depth 4 in.
The Confirmed Cavity on site
Subsurface Utility Mapping: Digital Twin

- Using radar technology, GEO SEARCH creates "Subsurface Digital Twin", the 3D underground map which captures the entire picture of invisible subsurface buried objects, including the entanglement of subsurface pipes in three dimensions.
Demonstration Survey
Demonstration Survey

Purpose:

- Subsurface cavity detection (Sinkhole prevention)
  Verify feasibility and effectiveness of GEO SEARCH’s underground cavity detection service in your city.

- Utility mapping
  Utilize GEO SEARCH radar technology to create 3D maps that capture an overall view of underground structures like underground piping.
  We will examine the effectiveness of this underground "digital twin” data and its benefits for your city.
**Survey Methods**

NO PARKED VEHICLES at any of the survey sites is required.

### Cavity detection (Sinkhole prevention)

**Primary survey**
* Traffic control is NOT needed
* Conducted independently by GEO SEARCH

**Secondary survey**
* Traffic control is needed.
* 4" core hole boring is done by the city

### 3D Utility mapping

**Preparation**
- Gathering existing data
  - Subsurface utility ledger
  - Topographic map etc.
  - Provided by the city

**Vehicle-mounted GPR**
* Traffic control is NOT needed
* Conducted independently by GEO SEARCH

**Hand-pushed GPR**
* Traffic control is needed.

### Vehicle-mounted GPR v.s. Hand-pushed GPR

<table>
<thead>
<tr>
<th></th>
<th>Vehicle-mounted GPR</th>
<th>Hand-pushed GPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image</td>
<td><img src="image1" alt="Vehicle-mounted GPR" /></td>
<td><img src="image2" alt="Hand-pushed GPR" /></td>
</tr>
<tr>
<td>Penetration depth</td>
<td>1.5m (5 ft) approx.</td>
<td>0.6m (2 ft)</td>
</tr>
<tr>
<td>Detectable width</td>
<td>1.4m (5 ft)</td>
<td>0.6m (2 ft)</td>
</tr>
<tr>
<td>Scanning speed</td>
<td>Max. 60 mph</td>
<td>Walking speed</td>
</tr>
<tr>
<td>Unfit condition</td>
<td>Pooling water on road surface</td>
<td></td>
</tr>
<tr>
<td>Data Resolution</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Safety</td>
<td>Excellent</td>
<td>Moderate</td>
</tr>
<tr>
<td>Speed</td>
<td>Excellent (Max 60 mph)</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Primary Survey: Data Acquisition

- Early detection of subsurface cavities is key to keeping roads safe and reducing road maintenance costs.
- Vehicle-mounted GPR acquires high-resolution, high-precision subsurface data at high speed.

No traffic control is required for the survey (max 60 mph)
Primary Survey: Data Analysis

- GEO SEARCH’s expert analysts accurately identify anomaly signals (likely subsurface cavities) and report their exact locations and horizontal expansion. In addition, based on abundant research experience and data, we provide analysis for prioritization of repairs.

Subsurface cavity detection
Secondary survey
Secondary Survey: Process

- Traffic Control
- Hand-Type Radar Survey
- Boring
- Marking
- Backfilling of borehole
- 360° Camera Survey

Role of the City

GEO SEARCH
Proposal of Demonstration Survey

Japanese government support:
This project will be supported by the Ministry of Economy, Trade and Industry in Japan as a study on promotion of overseas deployment of infrastructure by Japan
**Subsurface cavity detection**

**Output:** Subsurface cavity information which can be used for sinkhole prevention and proactive maintenance  
(*about 10 lane miles*)

**Division of Roles:**

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Agreement (City &amp; GEO SEARCH)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Road selection (City*)</td>
</tr>
<tr>
<td>Data acquisition</td>
<td>Data acquisition (GEO SEARCH)</td>
</tr>
<tr>
<td>Data analysis &amp; Reporting</td>
<td>Analysis (GEO SEARCH)</td>
</tr>
<tr>
<td></td>
<td>Reporting (GEO SEARCH)</td>
</tr>
</tbody>
</table>

*GEO SEARCH will support the selection of road.

---

**Subsurface 3D utility mapping**

**Output:** Subsurface utility map of around 5,000〜7,500 sq.ft.  
e.g. 30ft wide × 250ft long / 15ft × 500ft

**Division of Roles:**

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Agreement? (City &amp; GEO SEARCH)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Site selection* (City)</td>
</tr>
<tr>
<td>Data acquisition</td>
<td>Traffic control if needed (City)</td>
</tr>
<tr>
<td></td>
<td>Data acquisition (GEO SEARCH)</td>
</tr>
<tr>
<td>Data analysis &amp; Reporting</td>
<td>Analysis (GEO SEARCH)</td>
</tr>
<tr>
<td></td>
<td>Reporting (GEO SEARCH)</td>
</tr>
</tbody>
</table>

*A site where construction work is planned, and/or trial excavation can be conducted.  
GEO SEARCH will support the selection of site.*
Example of survey site

15 ft

500 ft

Example of survey site

30 ft

250 ft
Selection of survey sites

Survey Methods

• NO PARKED VEHICLES at any of the survey sites is required.

-Cavity detection (Sinkhole prevention)

Primary survey

*GEO SEARCH will conduct a 10 lane miles survey

Secondary survey

Survey locations for the cavity detection will be discussed between and the City and GEO SEARCH after analysis of the primary survey data. 2～4 locations

-Utility mapping

Gathering existing data

• Subsurface utility ledger
• Topographic map etc.
  Provided by the city

The same location is appropriate for the vehicle-mounted GPR and hand-pushed GPR survey locations. Approximately 5,000 sqft.～7,500 sqft. (one place)

The best location for this survey is where you will be installing a buried pipe and where you will be conducting potholing.
Traffic control

Traffic control for **Secondary survey**

Approx. 100ft

Length: approx. 30ft

Traffic control car
City's car
Geo search's car
Private car
cavity
Workspace
Safety cone
Output images for Utility mapping

2D Output

3D Output

AR

3D view
Output images for DUOMAP

Integration of existing data
- Buried Pipe Ledger
- Topographic map etc.
  Provided by the city

The same location is appropriate for the
vehicle-mounted GPS and hand-pushed GPS
survey locations.
Approximately 7,500 sqft.
e.g., where the underground piping is to be
worked, or where there is accurate information (recently
excavated) on the underground piping.

Outputs

If your city provides us with point cloud data
for the above ground area, we will integrate it
with the subsurface data to create a DUOMAP.

DUOMAP

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Other Items

- GIS software
- Insurance
- Survey Schedule – early November 2022
- NDA contract
- Video recording
- Posting of a summary on our website
# Schedule Plan of On-site Survey

**Before the data acquisition...**
Preparation for primary survey (road selection, equipment setup)

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 1 – 4</td>
<td>Primary Survey</td>
<td></td>
<td>Data Analysis</td>
<td></td>
</tr>
<tr>
<td>Nov. 7 – 11</td>
<td>Utility Mapping Survey</td>
<td></td>
<td></td>
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# Contact person

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