

WORK ORDER No. 1 FOR PROFESSIONAL SERVICES

TO: XYGO USA Inc.
10770 NW 66 Street, Suite 303
Doral, Florida 33178
(786) 705-9910

DATE: November 14, 2023

The City of Doral authorized the firm of XYGO USA, Inc. to provide professional services for the provision of creating a 3D Digital Twin Model of the City's right-of-way and features on an as-needed work order basis pursuant to Resolution 23-130 (the "Work"). The Work should be performed in accordance with, and subject to, the terms and conditions contained in the Professional Services Agreement for 3D Digital Twin between XYGO USA, Inc. and the City of Doral dated September 22, 2023 (the "Agreement").

SCOPE OF SERVICES AND SCHEDULE:

The scope of the Work will be as described in the Proposal from XYGO USA, Inc. dated July 06, 2023, for the creation of a 3D Digital Twin Model of the City's right-of-Way along Section 7 and Section 18, as identified in the attached Road Allocation Map (roads identified in green). The schedule requires the scope of Work to be completed within thirty (30) calendar days after Notice to Proceed (NTP) is provided. All limitations of time set forth in this Work Order are of the essence. The performance of the Work associated with this Work Order will be executed on a line-item basis in a not to exceed the amount of \$57,242.31.

XYGO USA, Inc. is required by the Agreement to begin Work subsequent to the execution of this Work Order, and the issuance of the NTP, or as directed otherwise. If you fail to begin work subsequent to the execution of this Work Order and the issuance of the NTP, the City of Doral will be entitled to disqualify the Proposal and revoke the award.

The Work Order incorporates the terms and conditions set forth in the s Agreement dated September 22, 2023, between the parties as though fully set forth herein. In the event that any terms or conditions of this Work Order conflict with the Agreement, the provisions of this specific Work Order shall prevail and apply. The Work Order is not binding until the City of Doral agrees and approves this Work Order.

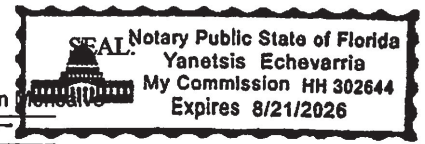
IN WITNESS WHEREOF, the parties hereto have executed this Work Order on the day and date first above written, in three (3) counterparts, each of which shall, without proof or accounting for the other counterpart, be deemed an original Contract.

CONSULTANT: XYGO USA, Inc.

BY: [Signature]
NAME: Alfredo Escobar
TITLE: President

WITNESSES:

1. [Signature] German
2. [Signature]



OWNER: City of Doral

AUTHENTICATION:

BY: [Signature]
NAME: Barbie Hernandez
TITLE: City Manager

BY: [Signature]
NAME: Connie Diaz
TITLE: City Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY FOR THE SOLE USE OF THE CITY OF DORAL:

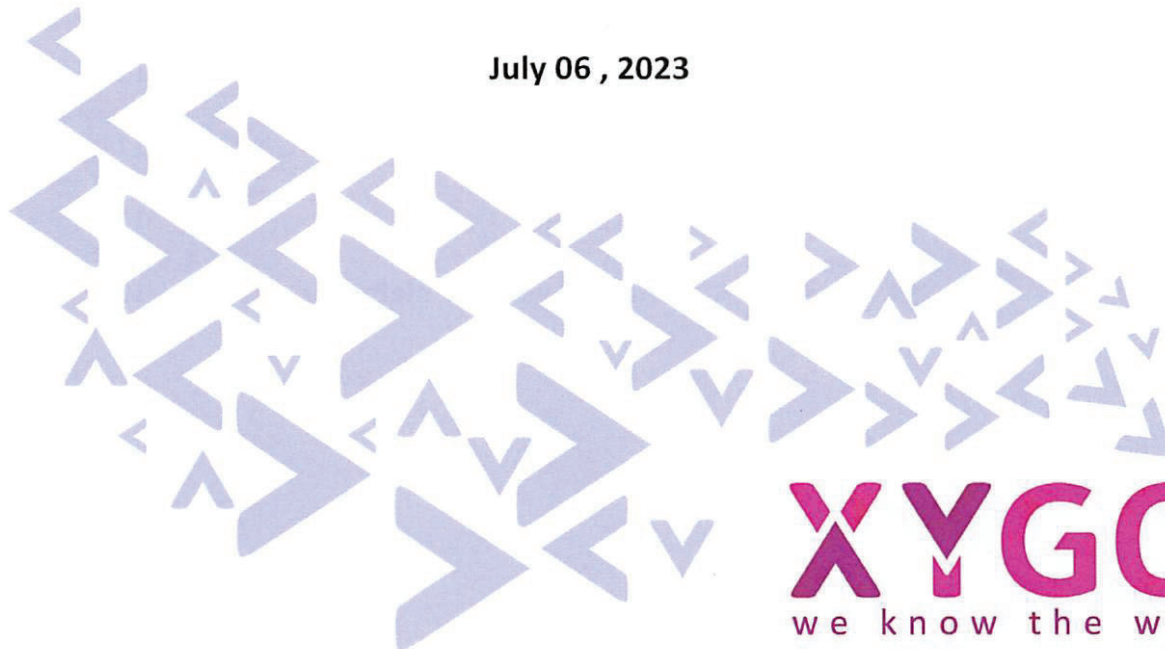
BY: [Signature]
NAME: Valerie Vicente, Esq
TITLE: City Attorney

2023

 **COMMERCIAL PROPOSAL**

**PROPOSAL FOR
INSPECTOR 3D SERVICE
City of Doral**

July 06 , 2023



XYGO[®]
we know the way

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1 BACKGROUND OF CITY OF DORAL

City of Doral need to obtain a survey data for identify problems with the status of some specifics elements of the city, like to sidewalks, public lighting, signals and other, for this, XYGO proposes a state-of-the-art survey that allows City of Doral to have a 3D Digital twin that allows a management of areas for analyzing and identify all of these anomalies.

Resume Project Scope Description:

Hire a service that allows the city to obtain the following:

- Develop a 3d **digital twin model** applied to the **detection of cracks and unevenness** in the pavement of public spaces (sidewalks) due to the effect of trees and/or other causes, through a survey with lidar sensors, 360 images and the creation of a Digital Twin platform for its detection and analysis.
- **Use the Digital Twin** platform to carry out other inspections in a systematic and automated way, such as determining public lighting in poor condition or does not work.
- **Use the Digital Twin** platform to carry out other inspections in a systematic and semi-automated way, such as determining sign inventory.
- Use the Digital Twin platform and Data Model for support a Smart Cities initiatives
- Use the Digital Twin platform and Data Model for update and add new data to GIS Database.



2 SPECIFIC OBJETIVES

According to the information provided by **the City of Doral**, XYGO propose to provide a service to achieve the following objectives:

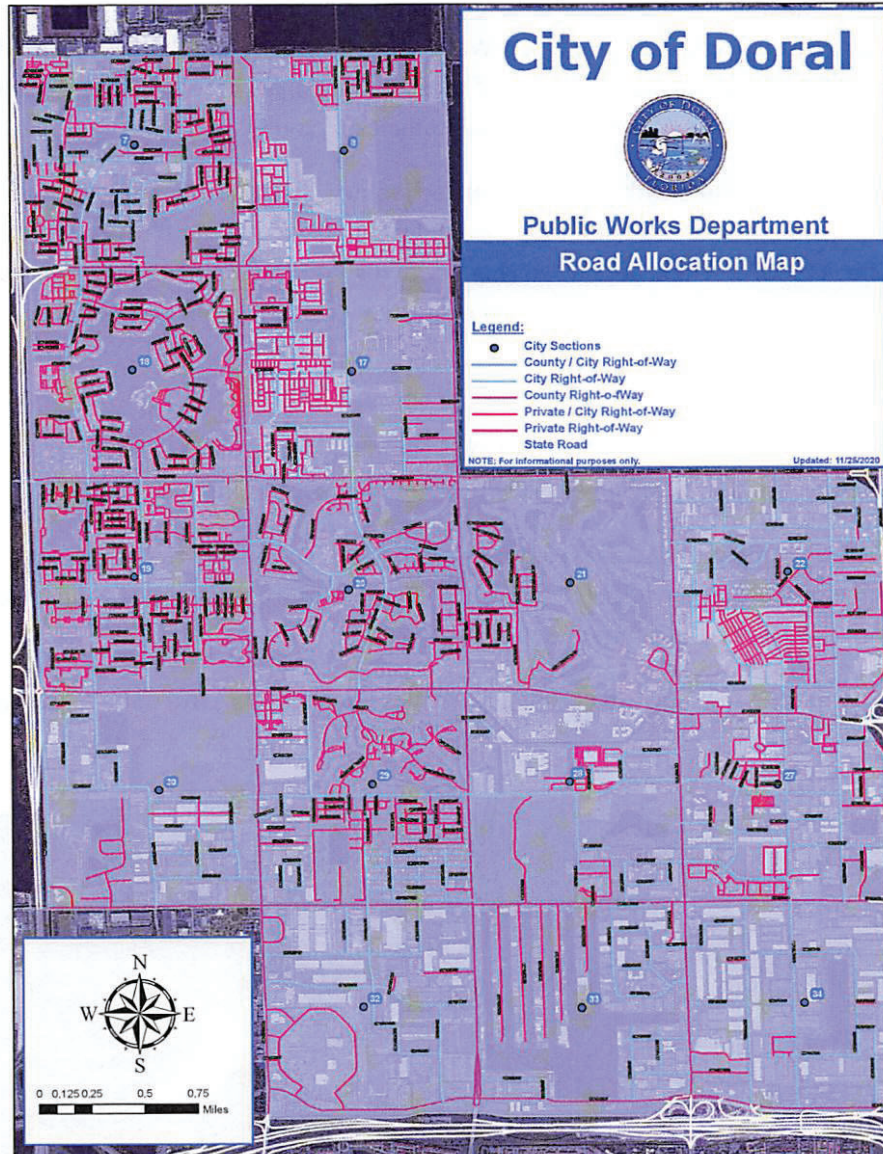
- ✓ Planning the survey areas and collecting with mobile and sensor all the study areas the deliverables offered. The specific surveys to be carried out may be requested by Work Order, which will be measured by linear miles within one or more sections of the city..

The service includes 2 different passes, one of them is through the use of a vehicle during the day, the second one is through the use of a bike with all the sensors too for a pass during the day rolling on the sidewalks.

- ✓ Obtaining Lidar point cloud, images and other attributes defined.
- ✓ Generation Digital Twin Model / Data Base
- ✓ Integration of other data sources (from existing city data bases, for examples Tree data base)
- ✓ Process the collected data, classify, and analyze according to the rules and specs that City of Doral will define and provide the result obtained from the process.
- ✓ For these proposal we do not include Integrations with other corporate software.
- ✓ Data Mining, Analyze
 - Detection of sidewalks faults and others
 - Detection of public lighting in poor condition or does not work.
 - Create a sign inventory
- ✓ Publishing
 - Provide a platform for the visualization and administration of the Digital Twin and the different deliverables mentioned above
- ✓ Delivery, publish
 - Deliver the data collected and generated from the different analyses for the different software and platforms (Digital Twin, GIS, Smart cities, others)
- ✓ Config Reports

3 AREA TO PERFORM THE SERVICE

The Digital Twin (point cloud and images survey) project considers work orders within the following area and sections requested by City of Doral , these are specified in the image (green segment / 85 linear miles app) below:



4 DESCRIPTION OF INSPECTOR 3D SERVICE / XYGO SERVICE

XYGO has extensive experience in the development of field data collection and survey services using LIDAR technology.

In 2007, XYGO created the Department of Geographic Information Systems Mapping LIDAR oriented to the development of technologies applied to the capture and interpretation of LIDAR information.

As a result of this initiative, companies whose focus is the distribution of services and the management of infrastructure assets located in the city (Ex: Water, Gas, Electricity and Highways), turn to XYGO with the main objective of implementing the use of these technologies in solving your business problems related to the operational management and maintenance of your assets.

XYGO's Lidar unit is equipped with laser scanner technology, an HD camera and position sensors such as GPS, INS unit, among others, all mounted on a different kind of transport (for example Professional Drone, Vehicle, ATV, Bike, Train, people walking) with high technical performance, capturing a terrain model in its flight or route that allows detect the different structures and natural terrain of the earth's surface.

XYGO Mobile Lidar position sensors provide X, Y, Z coordinate data that are added as attributes to the points captured by the laser scanner, along with other data such as intensity and color.

This system allows high precision measurements of distance, widths and lengths, heights, heights with coordinate, hypotenuse, triangulation measurements, digitization of points, lines and polygons, georeferencing of elements, planimetries, among others.

XYGO currently has the technical and human capacities necessary to carry out this service.



Imagen, DRON MATRICE 600. Truck for mobile mapping

5 SERVICES

Basic Service - Turnkey Inventory / Work Order Sidewalk Inspection		Setup	Signal Inventory	Work Order / SideWalk Inspection
1	Survey areas and collect with movil and sensor all the study area the deliverables offered.	One Time USD	One Time USD	USD / mile
1.1	Survey , collect with Lidar Scanner, Image 360 (One day time, One nighth time, One sidewalk)		✓	✓
2	Generation Digital Twin Model / Data Base			
2.1	Post Processing and project creation		✓	✓
2.2	Integration of others data sources (city data bases)		✓	✓
2.3	Process the collected data, classify, and analyses according the rules and specs for City of Doral		✓	✓
3	Data Mining , Analyze			
3.1	Sidewalks Faults			✓
3.2	Signal Inventory		✓	
3.3	Public Lights Faults		✓	
4	Publishing Platform			
4.1	Platform for Visualization, delivery, publish (Choose one alternative)			
4.1.1	Cloud services	✓	✓	✓
4.1.2	On Site City of doral Servers and data center (see the option section below)			
4.1.3	Mix (Cloud and On site). To Be define			
4.2	Config Reports	✓		

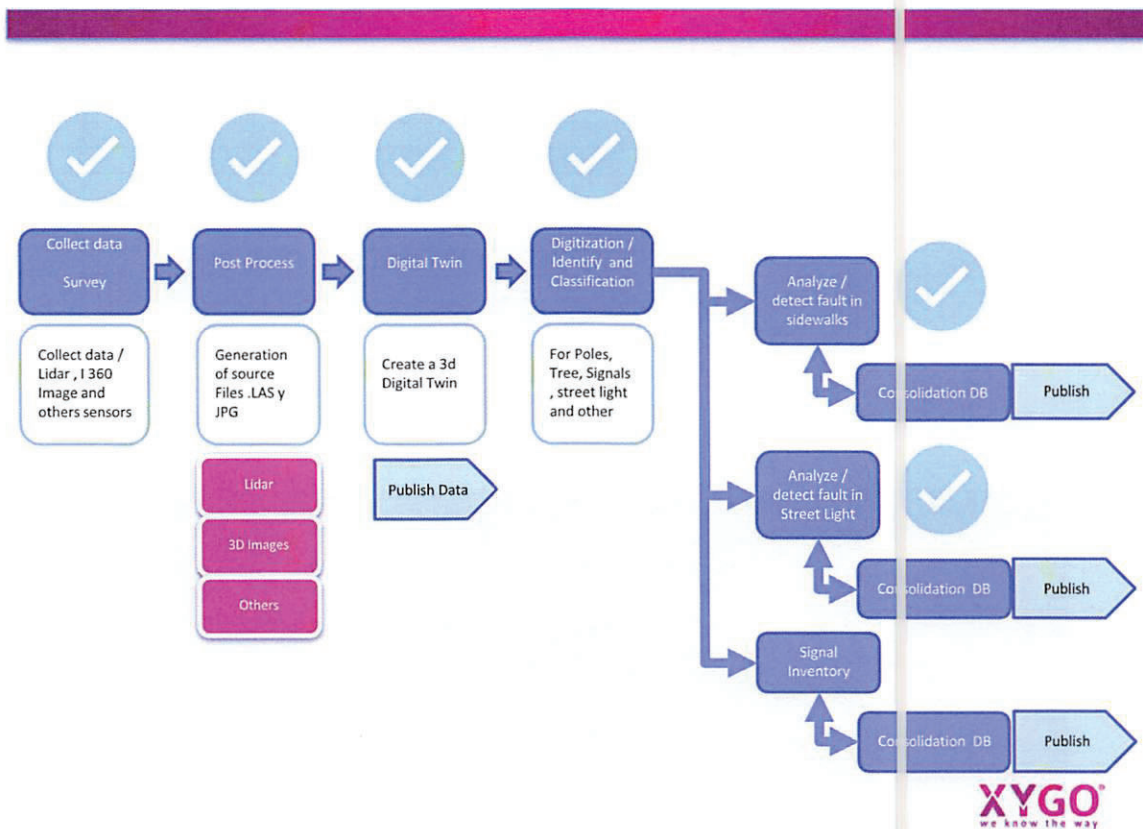


Digital Twin - Point cloud analysis 3d model , measurements accuracy 2 cms



6 ACTIVITIES AND REFERENTIAL DEADLINES

The project considers as a reference, the following task and times for its completion:



Some of the activities are in parallel, the total estimate days for each survey depend of the size of the section and the miles included. The schedule will be changed by weather conditions and/or permissions for collect.



7 COMMERCIAL TERMS

7.1 Prices

Basic Service - Turnkey Inventory / Work Order Sidewalk Inspection		Setup	Signal Inventory	Work Order / SideWalk Inspection
		One Time USD	One Time USD	USD / mile
1	Survey areas and collect with movil and sensor all the study area the deliverables offered.			
1.1	Survey , collect with Lidar Scanner, Image 360 (One day time, One nigh time, One sidewalk)		✓	✓
2	Generation Digital Twin Model / Data Base			
2.1	Post Processing and project creation		✓	✓
2.2	Integration of others data sources (city data bases)		✓	✓
2.3	Process the collected data, classify, and analyses according the rules and specs for City of Doral		✓	✓
3	Data Mining , Analyze			
3.1	Sidewalks Faults			✓
3.2	Signal Inventory		✓	
3.3	Public Lights Faults		✓	
4	Publishing Platform			
4.1	Platform for Visualization, delivery, publish (Choose one alternative)			
4.1.1	Cloud services	✓	✓	✓
4.1.2	On Site City of doral Servers and data center (see the option section below)			
4.1.3	Mix (Cloud and On site). To Be define			
4.2	Config Reports	✓		
Total of services (Base functionality)		12,000.00	39,250.00	475.58

Options	Publishing Platform	
	One Time USD	monthly USD
On Site City of doral Servers and data center		
Licences Orbit Publisher and other (purchase , one time)	13,500.00	
Licences Orbit Publisher and other (annual maintenance)		250.00
Licences ArcGis Online. (**)		208.00
Cloud (Datacenter)		2,300.00

7.2 Commercial Conditions

This section describes the commercial scope of the proposal.

- The services have three components. One of them is all activities and supplies needed to get the service/platform up and running (Setup / Licenses) the cost of these part are for one time.
- The second is the full signal inventory for collecting and processing the data to deliver the new datasets of signals and asset inventory of the city





- The Third part is the sidewalk inspection, the City purchase on demand work order for make the services in a specific sections or areas
- Our proposal to implement a platform include the Cloud option. We list in Options the prices for specific components for supply in the On-Site options, the cost for all others components needs in Onsite options is city charge.

Publish

- **Cloud Service** the uptime proposed is 99%
- 5 concurrent users are contemplated in the Orbit publisher

License

- Relational databases are not contemplated in the service.
- The license values are referential, they must be updated once the proposal is accepted

8 PAYMENT CONDITIONS

1.- SETUP

- 50% at start the project, together with the purchase order
- 50% at the end of setup

2. Inventory Service

- 50% at start the project, together with the purchase order
- 50% at the end and published the inventory.

3.- Sidewalk Inspection (Work Orders)

- 50% at start the work, together with the work order
- 50% at the end with the delivery data sets.





9 CURRENCY

It will be invoiced in the national currency, according to the value of the exchange rate (USD American Dollars) of the billing day.

10 THE TAXES

To all the above values, the corresponding taxes should be added.

11 EXCLUSIVITY AND CONFIDENTIALITY

This proposal does not consider exclusivity in the services offered by XYGO USA.

It does consider the confidentiality that corresponds to **City of Doral** information and business rules identified as company own.

12 VALIDITY OF THE PROPOSAL

The period of validity of the proposal is 60 days.

13 DATA FOR PURCHASE ORDER

Company : XYGO USA Corp
10770 NW 66th Street , suite 303
Doral, FL 33178

Attention : Alfredo Escobar

Email : alfredo.escobar@xygo.com

Phone : +1 786 705 9910



APPENDIX A

TABLE Inventory element

List Inventory elements
Street Name Signal
Bike Lane Ends Signal
Bike Lane Signal
Bus Stop
Roundabout directional signal
Circular intersection warning signal
Divided highway
Do not enter signal
End of Road Object Marker
Keep right signal
No entry Signal
No Parking Signal
No right turn
No thru trucks signal
No U-turn
One Way signal
Pedestrian crossing signal
Pet waste
Slow Children Playing signal
Speed advisory signal
Speed Limit Signal
Stop Signal
Tow-Away Zone Signal
Warning signal
Yield signal



3D Digital Twin Model Service

Vendor: XYGO USA Inc.
Work Order Num. 1

Survey Area: Section 7, Section 18

Item	Qty	Unit	Cost	Amount
Set Up (One Time)	1	EA	\$ 12,000.00	\$ 12,000.00
Signal Inventory (One Time)	1	EA	\$ 39,250.00	\$ 39,250.00
Right-of-Way Inspection	12.6	Mile	\$ 475.58	\$ 5,992.31
			TOTAL \$	57,242.31



RESOLUTION No. 23-130

A RESOLUTION OF THE MAYOR AND THE CITY COUNCIL OF THE CITY OF DORAL, FLORIDA, APPROVING A PROFESSIONAL SERVICES AGREEMENT WITH XYGO USA CORP., IN AN AMOUNT NOT TO EXCEED \$100,000.00, FOR THE ESTABLISHMENT OF A ONE (1) YEAR PILOT PROGRAM TO PROVIDE A 3D DIGITAL TWIN MODEL OF THE CITY'S PUBLIC RIGHT-OF-WAY WHICH WILL ALLOW THE PUBLIC WORKS DEPARTMENT TO DIGITALLY IDENTIFY, ANALYZE, AND MANAGE RIGHT-OF-WAY ANOMALIES; AUTHORIZING THE CITY MANAGER TO TRANSFER \$100,000.00 FROM ACCOUNT No. 001.80005.500633 TO ACCOUNT No. 001.80005.500340 TO PROVIDE SUFFICIENT FUNDING FOR THIS REQUEST; PROVIDING FOR IMPLEMENTATION; AND PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the Public Works Department ("PWD") is continuously looking for ways to improve services, efficiency and proactiveness to provide the best possible level of service to the City of Doral ("City"); and

WHEREAS, in December 2021, XYGO USA, Inc. ("XYGO"), approached PWD to offer their services for a complete 3D digital twin survey package that would allow for the detection, quantification, and measurements of right-of-way anomalies through a Digital Twin – Point Cloud Analysis, which can provide measurements of up to 2 cm of accuracy; and

WHEREAS, the digital twin model is created through a survey performed with lidar sensors, 360 degrees high resolution images, and a digital twin platform for its detection and analysis; and

WHEREAS, these services allow for an automated survey and analysis of public rights-of-way and the creation of a GIS based 3D model of the environment through Lidar technology; and

WHEREAS, the data and information acquired by the XYGO technology is used for the issuance of work orders through the XYGO system that helps organize, schedule, track, budget and ultimately address/correct the identified anomalies; and

WHEREAS, XYGO was identified by the PWD as the desired provider for a 3D Digital Twin Pilot Program on the basis of the company's unique experience and capacity, and their ability to implement the service in a short time frame; and

WHEREAS, pursuant to Section 2-323(12) of the City's Code of Ordinances, sole source purchases are exempt from the City's competitive procurement procedures when the city manager or purchasing agent determines in writing, after conducting a good faith review of available sources, that there is only one source for the required supply, brand, service, or construction item capable of fulfilling the needs of the City; and

WHEREAS, XYGO was determined to be a sole source provider of the services as set forth in Section 2-323(12) of the City's Code of Ordinances; and

WHEREAS, the services provided by XYGO were vetted through multiple City departments, including PWD, the IT Department, and the Procurement Division, and included a long analysis, including a review of final product samples demonstrating XYGO's capacity; and

WHEREAS, based on the above, the PWD requested a proposal from XYGO to implement a pilot program for the services mentioned; and

WHEREAS, the PWD and XYGO negotiated a proposal to provide the services on an as-needed work order basis at a rate of \$465.58 per center-line mile in a total amount not to exceed \$100,000.00, which includes a one-time setup fee of \$12,000.00, and a one-time fee of \$39,250.00 to create a Citywide signal inventory; and

WHEREAS, the proposed survey and analysis will be performed on a work order basis so that the City can identify anomalies in a given section of right-of-way, and the City and address/correct those anomalies first before surveying the next section; and

WHEREAS, City staff respectfully requests that the Mayor and the City Councilmembers approve a Professional Services Agreement with XYGO for a one (1) year pilot program to provide a 3D digital twin model of the City's right-of-way which will allow PWD to digitally identify, analyze, and manage right-of-way anomalies in an amount not to exceed \$100,000.00; and

WHEREAS, in addition, City staff respectfully requests authorization for the City Manager to transfer \$100,000.00 from the Public Works Department Fund – "Improvement Street" Account, Account Num. 001.80005.500633, to the Public Works Department Fund – "Contractual Services – Other" Account, Account Num. 001.80005.500340, to provide sufficient funding for this request.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND THE CITY COUNCIL OF THE CITY OF DORAL AS FOLLOWS:

Section 1. Recitals. The above recitals are confirmed, adopted, and incorporated herein and made part hereof by this reference.

Section 2. Approval. The Professional Services Agreement between the City of Doral and XYGO USA, Inc., in an amount not to exceed \$100,000.00, in substantially the form attached hereto as Exhibit "A", and the transfer of \$100,000.00 from the Public Works Department Fund – "Improvement Street" Account, Account Num. 001.80005.500633, to the Public Works Department Fund – "Contractual Services – Other" Account, Account Num. 001.80005.500340, to provide sufficient funding for this request, are hereby approved.

Section 3. Authorization. The City Manager is authorized to execute a Professional Services Agreement with XYGO USA, Inc., in an amount not to exceed \$100,000.00, subject to approval by the City Attorney as to form and legal sufficiency. The City Manager is further authorized to transfer \$100,000.00 from Account Num. 001.80005.500633 to Account Num. 001.80005.500340 to provide sufficient funding for the services.

Section 4. Implementation. The City Manager and the City Attorney are hereby authorized to take such further action as may be necessary to implement the purpose and the provisions of this Resolution.

Section 5. Effective Date. This Resolution shall take effect immediately upon adoption.

The foregoing Resolution was offered by Vice Mayor Pineyro who moved its adoption.

The motion was seconded by Councilmember Porras and upon being put to a vote, the vote was as follows:

Mayor Christi Fraga	Yes
Vice Mayor Rafael Pineyro	Yes
Councilwoman Digna Cabral	Yes
Councilwoman Maureen Porras	Yes
Councilman Oscar Puig-Corve	Yes

PASSED AND ADOPTED this 9 day of August, 2023.



CHRISTI FRAGA, MAYOR

ATTEST:



CONNIE DIAZ, MMC
CITY CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY FOR THE USE AND RELIANCE OF THE CITY OF DORAL ONLY:



VALERIE VICENTE, ESQ. for
NABORS, GIBLIN & NICKERSON, P.A.
CITY ATTORNEY