



Office of the City Manager

ACTION CALENDAR  
June 16, 2020  
(Continued from May 26, 2020)

To: Honorable Mayor and Members of the City Council  
From: Dee Williams-Ridley, City Manager  
Submitted by: Savita Chaudhary, Director, Information Technology  
Subject: Contract: CycloMedia Technology, Inc. for Geographic Information System Infrastructure Asset Data Acquisition

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to execute a contract with CycloMedia Technology Incorporated for Geographic Information System infrastructure asset data acquisition, for an amount not to exceed \$187,401 for the period commencing on May 15, 2020 to June 30, 2022.

FISCAL IMPACTS OF RECOMMENDATION

One time funding for this project in the amount of \$187,401 is available in the Department of Information Technology’s Fiscal Year (FY) 2020 IT Cost Allocation and Public Works’ Measure BB Local Streets and Roads fund.

\$136,401.00	680-35-362-377-6002-000-472-612990
\$ 51,000.00	134-54-624-695-0000-000-431-612990

**\$187,401.00 Total FY 2020 Professional Services**

CURRENT SITUATION AND ITS EFFECTS

The City desires to engage CycloMedia Technology, Inc. to acquire current 360-degree street level imagery to provide a single, highly accurate, authoritative source of location-based data that can be utilized by all City departments for captured street level imagery. This initiative will extract the following infrastructure assets to create accurate and current Geographic Information Systems (GIS) data inventories:

- Bus pads / stops
- Pavement marking
- Maintenance Access Holes
- Storm drains
- Pavement Striping
- Signs
- Curb paint color
- Street trees
- Parking meters
- Traffic lights
- Pedestrian Signal

Several city projects and strategic initiatives will benefit from capturing high quality and accurate street level imagery including:

- Emergency operations situational awareness
- Improved planning and development using imagery
- Remote asset condition assessment (building faces and road surfaces)
- Improved remediation planning (accurate measurements of repair and replace operations)
- Improved community engagement for planning, proposals and visualization
- Improved communication across internal stakeholders with common access to imagery and associated data

The dataset results in a high definition, three-dimensional map, and related data showing precise measurements for distances, clearances, elevations, and other aspects of critical infrastructure. Staff expects to use the images to perform bike lane assessments, identifying damaged infrastructure, inventory city trees, adjust parking lines and signage, as well as inventory city traffic signals.

On October 10, 2019, the City Manager executed a contract with NEXGEN Asset Management for software hosting, implementation, maintenance and related services for a Computerized Maintenance Management System and Enterprise Asset Management (CMMS/EAM) system. Geographic Information System (GIS) provides the digital asset inventory necessary for an effective CMMS/EAM.

The imagery and extracted data will provide many tools, enable our city staff to better serve the public and the efficiency gains expected are as follows:

- Save time, effort, and money by doing virtual inspections and automated asset management
- Optimize asset inventory & condition assessment (Public Works)
- Optimize and update building and zoning review processes (Planning)
- Respond to emergencies with knowledge and confidence through better situational awareness (Public Safety)
- Monitor, analyze and document existing street conditions (Transportation)

The contract with CycloMedia supports the City Strategic Plan goal of providing state-of-the-art, well-maintained infrastructure, amenities, and facilities.

#### BACKGROUND

On November 02, 2016, the City Manager signed the original contract with Geographic Technologies Group (GTG) to develop a GIS Master Plan. On September 08, 2017, the City Manager amended the original contract to include additional tasks including to conduct a comprehensive GIS data assessment.

On August 15, 2019, the City issued a Request for Proposals (RFP) for 360-degree street level imagery under Specification No.19-11279-C. CycloMedia Technology, Inc. met the City's operational, technology, and fiscal requirements.

Geographic Information Systems (GIS) supports the activities of the City and its community. The City of Berkeley Enterprise GIS empowers staff and the community to make decisions that impact the future of the City of Berkeley in a conversant and logical approach.

The City maintains a vast portfolio of public infrastructure assets in the public right-of-way: 134 traffic lights, over 8,000 street lights with 3,200 city-owned street light poles, 653 miles of streets, 388 miles of sanitary sewers, 78 miles of storm sewers, 2500 street signs, 35,000 trees, 300 miles of walkways, 325 retaining walls, and over 2000 parking meters. The 2017 GIS Master Plan and 2018 GIS Data Assessment report both found that many of these assets are not represented or are not current in the City's GIS.

The mapping functionality also addresses a series of requirements from the City's insurer, California Joint Powers Insurance Authority. The City needs comprehensive plans and periodic inspections for its signage, trees, and traffic signals.

The 360-degree imagery data and the data extracted will feed the asset inventories for the NEXGEN work order and asset management system. These asset inventories will then be maintained in the NEXGEN System and integrated with GIS data layers.

The asset information collected will create an inventory for reporting, maintenance and future planning requirements. The data can also be used for activities such as making accurate and precise measurements for distances, clearances, elevations, surface areas and other aspects of critical infrastructure.

#### ENVIRONMENTAL SUSTAINABILITY

An improved GIS will enable staff to view detailed images from throughout the city on their computers rather than going out into the field thus saving significant time and reducing the number of trips field employees have to visit a site to address an issue which reduces greenhouse gas emissions associated with travel time. The data is hosted remotely so there is no hardware overhead. This supports the reduction of carbon footprint and the goals of the City's Climate Action Plan.

#### RATIONALE FOR RECOMMENDATION

CycloMedia Technology, Inc. has over 30 years of professional experience and innovation in street level imagery collection and analysis, including Light Detection and Ranging (LiDAR) and asset extraction, and with hundreds of satisfied customers in the US and worldwide. CycloMedia Technology, Inc. has served clients similar in population to the City of Berkeley, including the City of Redlands, the City of Torrance, and has provided statewide services to Pacific Gas & Electric (PG&E).

Additionally, improving the quality and accuracy of the City's GIS information will support the implementation of the new CMMS/EAM system. The data collected will be used to create new asset layers in GIS which the NEXGEN CMMS/EAM system will utilize and allow work orders to be tracked against these assets and allow for new preventative maintenance schedules.

ALTERNATIVE ACTIONS CONSIDERED

Staff considered hiring contractors to use GPS in the field to create and update the infrastructure asset GIS data. This method is costly and time consuming. Cyclomedia's unique and patented processing techniques allow positionally-accurate GIS data to be collected in a cost-effective way and over a shorter period of time than a "boots on the ground" GPS field survey.

CONTACT PERSON

Savita Chaudhary, Director, Information Technology, 510-981-6541

Attachments:

1: Resolution

RESOLUTION NO. ##,###-N.S.

CONTRACT: GEOGRAPHIC INFORMATION SYSTEM (GIS) INFRASTRUCTURE  
ASSET DATA ACQUISITION

WHEREAS, the City of Berkeley identified the need create accurate and current Geographic Information Systems (GIS) infrastructure asset data inventories; and

WHEREAS, the City of Berkeley desires to acquire current 360-degree street level imagery and extract infrastructure assets to create GIS data inventories; and

WHEREAS, on August 15, 2019, the City issued a Request for Proposals (RFP) for 360-degree street level imagery under Specification No.19-11279-C and the RFP review committee evaluated the proposal and determined that the Cyclomedia Technology, Inc. proposal met the City's operational, technological, and fiscal requirements; and

WHEREAS, funding for this project in the amount of \$187,401 is available in the Department of Information Technology's Fiscal Year (FY) 2020 IT Cost Allocation and Public Works' Measure BB Local Streets and Roads fund.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is hereby authorized to execute a contract with CycloMedia Technology, Inc. for Geographic Information System (GIS) infrastructure asset data acquisition, for amount not to exceed \$187,401 for the projected period commencing on May 15, 2020 to June 30, 2022.

