

**CITY OF CORAL GABLES, FLORIDA
2023-2024 BUDGET**

INNOVATION AND TECHNOLOGY

FISCAL YEAR 2023 MAJOR ACCOMPLISHMENTS

- ✓ Technology planning, engineering, and provisioning milestones for ongoing building projects, including: Minorca Parking Garage 7, Development Services Center, Coral Gables Country Club, Granada Pro Shop, City Hall renovation, Passport Office renovation, Mobility Hub, New Fire Station 4, and other projects.
- ✓ Working with Finance, Human Resources, project Executive Steering Team and Working Groups, completed the implementation and go-live of the City's new Core Financial, HR and Supply Chain Enterprise System (Infor CloudSuite ERP). Finance and Supply Chain Management went live on April 3rd, 2023. Supplier registration portal and User Adoption training content platform went live on March 1st, 2023. Global HR and Payroll functions are scheduled to go live on October 16th, 2023. This enterprise business capabilities (EBC) advanced system completes the transition to paperless processes and digital efficiencies citywide, integrating with several other enterprise systems recently implemented in key areas such as infrastructure services, community recreation, electronic permitting, and asset management.
- ✓ Started construction work on a broadband and public Wi-Fi expansion project, that is building 26 additional fiber optics segments to connect multiple city buildings and facilities and install additional smart city poles to improve/enhance connectivity, mobility, public safety, network resilience, situational awareness, digital inclusion, citizen services, and foster innovation, quality of life programs and economic opportunities for the entire community, with a regional impact.
- ✓ Working with Development Services department, implemented new functions and modules for the City's Enterprise Permits and Land Management system (EnerGov): Code Enforcement 311 Requests portal, Code Enforcement electronic process, and Electronic Plan Review Bluebeam integration. Also, implemented a new queuing system (QMinder) and customer waiting times dashboards for the Development Services Center.
- ✓ Implemented 4 new Wi-Fi Sites (Pitman Park, Pierce Park, Alhambra and Ponce de Leon, and Country Club) and 17 Wi-Fi hotspots; 2 Fiber Segments (1 on Alhambra and 1 on Ponce de Leon); 4 new network sites (Circuits at Youth Center, 427 Building, Country Club, and 1 Starlink Satellite Link); 125 network devices, 2 smart lights, 71 Sensors and Safety Cameras (Coral Gables Country Club: 41 CCTV Cameras with IoT sensing; Geofence Cameras addition to existing poles: 4 CCTV Cameras with IoT sensing; CCTV Cameras for Illegal Dumping, Parks, and Parking: 17 CCTV Cameras and IoT sensing; Development Services Center: 7 CCTV cameras connected to video analytics; Pierce Park: 2 CCTV Cameras with IoT sensing); 2 additional Smart City Poles (Granada and 8th St ALPR/CCTV pole); 2 new ALPR Cameras and 2 new CCTV/sensor cameras (8th St and Lisbon St Smart CCTV Light Pole, and Cobra Smart light with built-in 360 View CCTV Camera); 3 new smart city kiosks; 5 datacenter servers/appliances/storage devices; 20 new software applications; 20 additional open data sets, 4 apps, 8 digital services in the Smart City Hub.

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- ✓ Developed 11 new homegrown applications; Worked on 6 new research collaboration projects (NASA, UM, DOE/PNNL, UC Berkeley, 2 with NIST); Published 4 new research papers; Improved numerous processes in collaboration with all city departments (citywide core financial, supply chain and procurement, budget, HR, waste management, permitting, plan review, asset management, 911 dispatch, and other city processes improved as part of the Business Process Review and workflow reengineering & automation, and digital transformation ERP projects: Infor Cloud Suite, EnerGov, Rubicon, Cartegraph, ProQA); Received 7 smart city innovation and technology awards (IEEE Smart Cities Juror Award, 2 from Smart 50, Smart 21, Top7 Intelligent Community, Geospatial Maturity Index award, LocalSmart GoldenGov).
- ✓ Implemented new functions and modules for the City's Asset Management System (Cartegraph): Public Works Utilities, Public Works Greenspace, and Property Management services. Provided administrative training, additional tablets and mobile App deployment, application configuration, GIS layers and forms design, interactive web site resource design, and optimized/automated workflows.
- ✓ Working with Police, Fire, and 911 Communications, completed the implementation and go-live of the new Priority Dispatch system for Police and Fire 911 Communications (ProQA Police & Fire). The system and the new electronic process went live on April 11, 2023.
- ✓ Content Management system (LaserFiche) horizontal integration with Electronic Permits (EnerGov), GIS platforms (ESRI ArcGIS) and CGIT's homegrown smart city platforms (Digital Twin and Smart City Hub) to improve efficiencies, interoperability, and accessibility of property records.
- ✓ Working with Public Works, implemented a Waste Management System (Rubicon), to bring digital efficiencies and innovation in citywide sustainable waste management, recycling, and operations.
- ✓ Started project execution of the new City Mobile App, Mobile Digital Experience Platform (DXP) and Customer Relationship Management (CRM) 311 platform (Salesforce). This platform will provide advanced communication capabilities for Coral Gables residents, businesses, and visitors, including a chatbot AI assistant and text messaging and notification functionalities.
- ✓ Trolley fleet technology upgrades/additions: *i.* Deployed Wi-Fi service inside the Trolleys; *ii.* Implemented automated people counter (APC); *iii.* Live Data dashboards and Analytics.
- ✓ Public Wi-Fi at Pittman Park (Alhambra Cir Financial District) completed.
- ✓ Completed several Smart Lighting Upgrades and Additions: *i.* Migrated the Miracle Mile Smart Lighting controllers to a new Lighting App for improved asset and energy management and data reporting; *ii.* Integrated the City's Smart Lighting assets with the City's Urban Analytics AI Platform (Quantela Atlantis) and deployed live smart lighting asset management and energy efficiency dashboards in the Coral Gables Smart City Hub public platform.

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- ✓ Implemented several GIS systems and improvements: *i.* Created a web experience builder app for Development Agreements/Covenants; *ii.* Transportation Speeds and Volumes Data Management portals for Public Works; *iii.* Public Map of City of Coral Gables Traffic Calming Zones; *iv.* Property Tax Value Analysis for Economic Development and Central Business District; *v.* Art in Public Places technologies for Historic Resources; *vi.* Pine Bay area road name updates in Google maps; *vii.* New GIS Lab internships; *viii.* IT GIS completed the PSD Geospatial Maturity Index 2022 benchmark assessment and received the GMI Award; *ix.* IT received GISCI Endorsing Designation from the GIS Certification Institute; *x.* Enhancements to the City's digital twin platform 3D layers and the Public Works GIS Portal.
- ✓ Working with Police, Fire and 911 Communications, executed contract and began project execution of the new Police/Fire/911 CAD and RMS cloud suite (Mark43). The new smart public safety cloud-native system that is being implemented features advanced and smart data reporting, mobile applications, systems integration and interoperability, with a robust and resilient platform and automated electronic process capabilities and functionalities for public safety. The user interface is modern and provides a seamless experience for users, with accessible and integrated up-to-date geospatial information, and advanced record management capabilities with streamlined workflows, intuitive search, and native NIBRS record format validations.
- ✓ Installed multiple CCTV additions to enhance public safety and code enforcement: *i.* CCTV cameras installations at Rotary Park and Catalonia Park completed; *ii.* Solar Cellular CCTV cameras deployment in several blocks to monitor Illegal dumping; *iii.* San Sebastian / Monegro CCTV camera installed. The new camera feeds were integrated with the City's Community Intelligence Center (CIC) monitoring system.
- ✓ Finalized audiovisual (AV) equipment retrofitting at various City facilities: *i.* Community Meeting Room (CMR) in the Police and Fire HQ building; *ii.* Fairchild/BOA conference room in the Development Services Center building; *iii.* Other City conference rooms and offices.
- ✓ Developed multiple homegrown applications for various city functions and departments: *i.* Police Property Evidence log application; *ii.* Crime View and Analysis dashboards; *iii.* Smart City Hub AIDA AI bot Beta Testing and integration with OpenAI GPT4 / ChatGPT API; *iv.* Several GIS apps.
- ✓ Implemented multiple Cyberinfrastructure Upgrades/Additions: *i.* Security Information and Event Management (SIEM) enhancement; *ii.* Multi-factor Authentication (MFA) enhancement; *iii.* Single-Sign-on (SSO) cybersecurity integration with various city apps; *iv.* Active Directory (AD) management and reporting cybersecurity solution; *v.* Hyperconverged Datacenter Infrastructure Upgrade; *vi.* Security Cloud enhancements for data backup protection, risk analysis and monitoring; *vii.* Automatic Call Attendant implementation for main numbers at Building and Zoning, City Hall, and Finance Department; *viii.* Country Club point of sale software implementation to allow restaurant operations by the city; *ix.* Deployment of new fingerprint scanner system for Police; *x.* Implementation of Crash Mapping system, and Police Record

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Management standard, and integration with the City's Public Safety systems; xi. New smart city public kiosks additions in collaboration with Public Works, Economic Development and City Clerk's Office (City Hall, Alhambra Cir., Ponce Circle Park / The Plaza.)

- ✓ Upgraded the communications technology for the Coral Gables Police state-of-the-art Mobile Command Center, and supported its deployment at the Carnival on the Mile event, CCTV Trailers deployments at various City events, and hurricane Ian mutual aid operations with CGPD, CGFD and CGIT in Lee County (Ft. Myers, Sanibel).
- ✓ Began manufacturing production of the City's new smart city poles which feature the Coral Gables industrial design developed with world-renowned design firm Pininfarina and innovative smart city electronics engineering firm Ekin. The City's modular AI-powered poles will now incorporate The City Beautiful unique brand and Mediterranean revival aesthetics. Manufacturing CAD 3D design and tooling were created for industrial production and prototypes. First prototypes of the new designs will be installed at various city parks and street intersections to enhance public Wi-Fi connectivity, public safety and situational awareness, traffic management, and environmental control.
- ✓ Kicked off in Coral Gables the Autonomous Intelligent Assistant (AutonomIA) traffic/energy AI optimization project – funded by the U.S. DOE Advanced Research Project Agency (ARPA-E) – with scientists from the Pacific Northwest National Laboratory (PNNL), UC Berkeley, industry partners (Siemens/Yunex, Aimsum, TTS) and City engineers from the City of Coral Gables Innovation & Technology and Public Works departments. CGIT presented this project with PNNL scientists and industry partners at the ARPA-E Energy Innovation Summit in Washington D.C. and NEXTCAR Industry Day in Detroit. This exciting R&D project combines artificial intelligence, multiscale simulation, and real-time control to improve energy efficiencies and reduce energy expenditures, congestion, and emissions for regional transportation systems for multiple operational scenarios. Our project team will showcase AutonomIA on a small-scale traffic network in Coral Gables for varying Connected and Automated Vehicles (CAV) penetration levels to demonstrate these gains. Project execution started, developing a smart traffic network digital twin environment for various Coral Gables testbed traffic corridors (Ponce de Leon Blvd., Alhambra Cir., and Miracle Mile).
- ✓ Received the 2022 IEEE Smart Cities Jury Award from the Institute of Electrical and Electronics Engineers (IEEE), for the IT project "Coral Gables Smart District Expansion". "IEEE recognizes city/municipalities projects around that have successfully leveraged smart city technologies and innovation." The CGIT team participated remotely in the IEEE Smart Cities Award ceremony transmitted live from Paphos, Cyprus, and received this international award on behalf of our city.
- ✓ Developed and presented a project concept proposal for a Technopark community innovation, R&D, training, and incubator/accelerator multi-purpose technological center that can provide high-tech skills to young students and entrepreneurs in our community, connect local tech talent with projects and job opportunities in the local industry in Coral Gables, provide revenue-

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generating affordable tech solutions and work/office/lab space to local business needs, and scale the Coral Gables smart districts projects. This P3 initiative would be accomplished with partners in academia, tech industry, local businesses, and NPOs. As part of this initiative, CGIT started an MOU for Industry 4.0 High-tech upskilling (AI, data science, software engineering) of local businesses and workforce, working with the education and technology partners and in collaboration with the Economic Development Department.

- ✓ Received the 2022 IEEE Smart Cities Jury Award from the Institute of Electrical and Electronics Engineers (IEEE), for the IT project “Coral Gables Smart District Expansion”. “IEEE recognizes city/municipalities projects around that have successfully leveraged smart city technologies and innovation.” The CGIT team participated remotely in the IEEE Smart Cities Award ceremony transmitted live from Paphos, Cyprus, and received this international award on behalf of our city.
- ✓ Received the 2023 Smart 50 Award from Smart Cities Connect and Smart Cities Connect Foundation, for the IT project “Coral Gables Smart City Digital Twin Horizontal Integration Platform”, which was also named one of the three global winners from the overall awardee pool. “Smart 50 Awards - in partnership with Smart Cities Connect and Smart Cities Connect Foundation - annually recognize global smart cities projects, honoring the most innovative and influential work. This year, we will designate three winners from the overall awardee pool.” This is CGIT’s second Smart 50 international award – our team also received it in 2020 for the IT urban infrastructure project “Coral Gables Smart Districts Expansion.”
- ✓ City of Coral Gables was named one of the world’s Top Seven Intelligent Communities of 2023. The Intelligent Community Forum (ICF) co-hosted by Economic Development Australia (EDA) and the Economic Developers Association of Canada (EDAC), named City of Coral Gables one of the world’s Top7 Intelligent Communities of 2023 and a semifinalist for the 2023 Intelligent Community of the Year, with other communities from eight nations over five continents. The Top7 Intelligent Communities have applied six principles evaluated by ICF: *i.* Broadband Connectivity, *ii.* Sustainability, *iii.* Knowledge Work, *iv.* Digital Inclusion, *v.* Innovation, *vi.* Community Engagement. The Intelligent Community of the Year will be announced in October based on the Community Accelerator Strategy of building inclusive economic prosperity, social health and cultural richness, which together create strength and resilience.
- ✓ Received the 2022 Geospatial Maturity Index (GMI) Award from the Public Sector Digest (PSD) organization. Coral Gables Ranked in the U.S. Top-5 and the North America Top-20 GMI. “The 2022 Geospatial Maturity Index (GMI) is the fourth year that PSD Citywide has published its benchmarking study for GIS programs. The GMI survey is a tool for public sector organizations to measure the maturity of their GIS (geographic information system) programs and serves as a resource to guide participants in advancing their programs. A total of 97 organizations completed the 2022 GMI survey. Among the participants were 72 organizations from Canada and 25 from the United States. This report includes the announced Top 25 GIS Programs in North America for

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2022, a trend analysis of survey results, and a glance at the achievements and challenges of some of our top participants.” This is CGIT’s third PSD award – our team also received the Open Cities Index award and ranked first place in the U.S. in 2020 and 2019.

- ✓ City of Coral Gables and CGIT were recognized as a best-practice case study at the Opening Keynote of the Gartner IT Symposium/Xpo in Orlando, with thousands of technology leaders from around the world in attendance. “During the opening keynote, Gartner showcased Coral Gables as a best-practice example of how to use intelligent connected infrastructure (ICI) to enable faster, less expensive and safer movement.” “IT Symposium/Xpo, Gartner’s flagship conference, is the
- ✓ World’s most important gathering of CIOs and senior IT executives. The Symposium opening keynote is the most important session Gartner put on their stage, revealing Gartner’s thought leadership for the coming 12 months.” “Gartner global IT Symposium/Xpo series attracted more than 24,000 attendees globally, including more than 7,000 CIOs. The series starts in Gold Coast, Australia in Sept. 2022, continues in Orlando, USA; Barcelona, Spain; and Tokyo, Japan in Oct. 2022, and concludes in Kochi, India in November 2022.”
- ✓ Received the 2022 LocalSmart GoldenGov Award: “Scoop News Group is thrilled to announce the winners of the fourth annual LocalSmart Awards, a program that highlights the people and projects making city, county and municipal government better.” “From Gallatin County, Montana, to Chicago, to Coral Gables, Florida, technology is playing an increasingly important role in residents’ lives. These leaders are the ones making that happen in an efficient, secure and prominent way.”
- ✓ The National Institute of Standards and Technology (NIST) recognized City of Coral Gables as a smart city best practice organization with three new case studies: “Getting Real – Smart Transportation in the City of Coral Gables, Florida”, “NIST’s GCTC Leaders and Member Cities Participate in Smart City Workshop at the Western Hemisphere Cities Summit of the Americas”, and “NIST GCTC Members Highlight Coral Gables’ Use of Digital Technologies at Smart City Expo”.
- ✓ Presented the City’s smart city innovation and technology initiatives at professional events, creating productive partnerships with experts in academia, government and industry professional organizations and increasing outreach and adoption of City technologies. Also, for the second year in a row, the City of Coral Gables Innovation and Technology team (CGIT) hosted the Smart Cities Council Innovation Conference at the City of Coral Gables Community Meeting Room (CMR).
- ✓ Authored and submitted papers and articles to professional publications, including engineering research papers for the Institute of Electrical and Electronics Engineers (IEEE), Florida Engineering Society (FES), Smart Cities Americas, and CIO Magazines. Also, Florida International University (FIU), Harvard University, MIT Media Lab, IEEE, FES, Gartner Inc., TechTables, StateTech, StateScoop, and multiple other organizations published case study videos, papers and articles highlighting City of Coral Gables smart city initiatives and accomplishments.

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- ✓ Collaborated with the National Institute of Standards and Technology (NIST, U.S. Department of Commerce) on the development of a federal strategic plan and framework for smart cities. Worked together with the leaders of the Smart Cities program within the NIST Communications Technology Laboratory, the NIST Global Community Technology Challenge (GCTC) think tank, and George Mason University (GMU) scientists developing the national strategic foundation.
- ✓ Several STEM research and education partnerships and smart city collaboration initiatives with University of Miami, Florida International University, NOVA University, Miami-Dade College, UC Berkeley, Georgia Tech, Institute of Electrical & Electronics Engineers (IEEE), Cities Today Institute (CTI), Smart Cities Council, Dense Networks Think Tank, U.S. Department of Energy (DOE), Department of State (DOS) and Department of Commerce (DOC), Advanced Research project
- ✓ Agency-Energy (ARPA-E), The Atlantic Council GeoTech Center, Pacific Northwest National Laboratory (PNNL), National Institute of Standards and Technology (NIST), World Business Angel Investment Forum (WBAF) Smart City Commission, 4Geeks Academy, Beyond Academics, and other organizations. Also, collaborated with IEEE and NIST in the development of engineering standards and frameworks for smart cities.