# REQUEST FOR PROPOSALS (RFP) NO. XXXX
# FOR
## TURNKEY ADVANCED METERING INFRASTRUCTURE (AMI) SOLUTION

**ISSUED BY MIAMI-DADE COUNTY:**
Internal Services Department, Strategic Procurement Division
for
Miami-Dade Water and Sewer Department

**MIAMI-COUNTY CONTACT FOR THIS SOLICITATION:**

TBA
111 NW 1st Street, Suite 1300, Miami, Florida 33128
Telephone:  (305) 375-5683
E-mail:

**PROPOSALS DUE:**
TBA

**IT IS THE POLICY OF MIAMI-DADE COUNTY (COUNTY) THAT ALL ELECTED AND APPOINTED COUNTY OFFICIALS AND COUNTY EMPLOYEES SHALL ADHERE TO THE PUBLIC SERVICE HONOR CODE (HONOR CODE). THE HONOR CODE CONSISTS OF MINIMUM STANDARDS REGARDING THE RESPONSIBILITIES OF ALL PUBLIC SERVANTS IN THE COUNTY. VIOLATION OF ANY OF THE MANDATORY STANDARDS MAY RESULT IN ENFORCEMENT ACTION. (SEE IMPLEMENTING ORDER 7-7)**

**Electronic proposal responses to this RFP are to be submitted through a secure mailbox at BidSync until the date and time as indicated in this document.**  It is the sole responsibility of the Proposer to ensure its proposal reaches BidSync before the Solicitation closing date and time.  There is no cost to the Proposer to submit a proposal in response to a Miami-Dade County solicitation via BidSync.  Electronic proposal submissions may require the uploading of electronic attachments.  The submission of attachments containing embedded documents or proprietary file extensions is prohibited.  All documents should be attached as separate files. All proposals received and time stamped through the County's third party partner, BidSync, prior to the proposal submittal deadline shall be accepted as timely submitted.  The circumstances surrounding all proposals received and time stamped after the proposal submittal deadline will be evaluated by the procuring department in consultation with the County Attorney's Office to determine whether the proposal will be accepted as timely.  Proposals will be opened promptly at the time and date specified.  The responsibility for submitting a proposal on or before the stated time and date is solely and strictly the responsibility of the Proposer.  The County will in no way be responsible for delays caused by technical difficulty or caused by any other occurrence.  All expenses involved with the preparation and submission of proposals to the County, or any work performed in connection therewith, shall be borne by the Proposer(s).

A Proposer may submit a modified proposal to replace all or any portion of a previously submitted proposal up until the proposal due date.  The County will only consider the latest version of the proposal. For competitive bidding opportunities available, please visit the County's Internal Services Department website at: http://www.miamidade.gov/procurement/.

Requests for additional information or inquiries must be made in writing and submitted using the question/answer feature provided by BidSync at **www.bidsync.com**. The County will issue responses to inquiries and any changes to this Solicitation it deems necessary in written addenda issued prior to the proposal due date **(see addendum section of BidSync Site).**  Proposers who obtain copies of this Solicitation from sources other than through BidSync risk the possibility of not receiving addenda and are solely responsible for those risks.

## 1.0 PROJECT OVERVIEW AND GENERAL TERMS AND CONDITIONS

## 1.1 Introduction

Miami-Dade County, herein after referred to as the County, as represented by the Water and Sewer Department (MDWASD) is soliciting proposals for a turnkey, state of the art Advanced Metering Infrastructure (AMI) Solution, herein after referred to as the Solution, to support MDWASD operations. Through the use of the Solution, the County intends to improve the customer experience, improve efficiency, reduce recurring operating costs, and enhance revenue opportunities while hardening revenue security. The Solution shall be inclusive of software, equipment/hardware, installation, implementation, customization, training, maintenance and technical support and shall also provide a contact center tool as further described herein. The County is seeking a scalable Solution that is capable of potential expansion to other County operations in the future.

The County anticipates awarding a contract for an initial five (5) year period, for the completion of the project., with one (1) three (3) year option to renew, at the County's sole discretion.

**The anticipated schedule for this Solicitation is as follows:**

Solicitation Issued:                         TBA

Pre-Proposal Conference/Site Visit:          TBA

                                             https://youtu.be/iuA713l0r_c

                                             Proposers shall submit questions or requests for information, whether pertaining to the video Site Visit or any other portion of the Solicitation, to the County via BidSync until the Deadline for Receipt of Questions stated below.

Deadline for Receipt of Questions:           TBA

Proposal Due Date:                           See front cover for date and time.

Evaluation Process:                          TBA

Projected Award Date:                        TBA

**1.2     Definitions**

The following words and expressions used in this Solicitation shall be construed as follows, except when it is clear from the context that another meaning is intended:

1.  The words "Advanced Metering Infrastructure" (AMI) shall mean a system that collects, communicates, and analyzes data from water meters and other Third Party devices installed under the umbrella of the system.
2.  The words "AMI Headend System" shall mean the data repository that collects data transmitted via the network (cellular or fixed network), including a meter data management system and the ability to support a third-party customer portal. The AMI Headend System may include a native customer portal.
3.  The word "Collectors" shall mean remotely installed devices that collect transmissions from the Endpoints and transmit this data to and from the Headend system.
4.  The word "Contractor" to mean the Proposer that receives any award of a contract from the County as a result of this Solicitation.
5.  The word "County" to mean Miami-Dade County, a political subdivision of the State of Florida.
6.  The work "Endpoint" shall mean the transceiver unit that is installed/connected to the meters and/or other remote devices, that transmits meter readings or other data to the AMI headend system.

7.  The words "Equipment/Hardware" to mean any physical component of the Solution required for the Solution to operate.
8.  The words "Final Acceptance" to mean the County's written notice that all Work has been completed and the Solution, including all components, has been successfully implemented.
9.  The words "Go-Live" to mean the County's use of the Solution in a production environment with business being transacted in the Solution.
10. The word "GUI" or "Graphical User Interface" to mean a program interface that takes advantage of a computer's graphics capabilities in an attempt to make the program user-friendly and intuitive to use.
11. The word "IP" or "Internet Protocol" to mean a network layer protocol in the internet protocol suite and is encapsulated in data link layer protocol (e.g., Ethernet). A lower layer protocol, IP provides the service of communicable unique global addressing amongst computers.
12. The word "ISO" to mean International Organization for Standardization which is comprised of national standards bodies from around the world. ISO is the world's largest developer and publisher of standards.
13. The work "Meter" shall mean a device that measures the amount of water that passes through it.
14. The word "P2PE" to mean Point to Point Encryption.
15. The words "PC" or "Personal Computer" to mean a microcomputer designed for individual use for such applications as word processing, data management, or financial analysis.
16. The word "Portal" shall mean a web-based application used to provide users a means to access the AMI data. This can be for use by internal (employees) or external (customers) users. External application should integrate with existing Customer Self-Service application and provide Single Sign-on capabilities.
17. The word "Prime" shall mean the entity within the project team that will be in privity with the County and completely responsible for the Turn-Key implementation of the project.
18. The word "Proposal" to mean the properly signed and completed written good faith commitment by the Proposer submission in response to this Solicitation by a Proposer.
19. The word "Proposer" to mean the person, firm, entity or organization, as stated on the Proposal Submittal Form, submitting a proposal to this Solicitation.
20. The words "RFI/EMI' or "Radio Frequency Interference/Electromagnetic Interference" to mean  Radio Frequency and Electromagnetic Interference are phenomena that occur when the radio frequency of electromagnetic field of one device disrupts, degrades, or impedes another device.
21. The words "RFID" or "Radio Frequency Identification" to mean the technology utilized by proximity card systems, for identifying a customer's credential. A RFID system consists of an antenna, a transceiver (which heads the radio frequency and transfers the information to a processing device), and a transponder, also called a tag (which is an integral circuit containing the RF circuitry and information to be transmitted).
22. The words "Scope of Services" to mean Section 2.0 of this Solicitation, which details the work to be performed by the Contractor.
23. The word "Solicitation" to mean this Request for Proposals (RFP) document, and all associated addenda and attachments.
24. The word "Subcontractor" to mean any person, firm, entity or organization, other than the employees of the Contractor, who contracts with the Contractor to furnish labor, or labor and materials, in connection with the Services to the County, whether directly or indirectly, on behalf of the Contractor.
25. The words "TCP/IP" to mean Transmission Control Protocol/Internet Protocol, which is the set of communications protocols used for the Internet and other similar networks.

26. The words "Third-Party Device" shall mean any device, other than a water meter, that is installed in    Examples include acoustic leak detectors, pressure sensors, temperature sensors, water quality sensors, etc.
27. The words "Two-Way Communication" shall mean verification of data transmittal or "hand-shake" verification, over-air firmware updates, and the ability to receive notification alarms, such as notification of potential tamper.
28. The words "UL" or "Underwriters Laboratories" to mean a not-for-profit organization dedicated to public safety.
29. The words "Work", "Services", "Program", or "Project" to mean all matters and things that will be required to be done by the Contractor in accordance with the Scope of Services, and the terms and conditions of this Solicitation.

## 1.3    General Proposal Information

The County may, at its sole and absolute discretion, reject any and all or parts of any or all proposals; accept parts of any and all proposals; further negotiate project scope and fees; postpone or cancel at any time this Solicitation process; or waive any irregularities in this Solicitation or in the proposals received as a result of this process.  In the event that a Proposer wishes to take an exception to any of the terms of this Solicitation, the Proposer shall clearly indicate the exception in its proposal.  No exception shall be taken where the Solicitation specifically states that exceptions may not be taken.  Further, no exception shall be allowed that, in the County's sole discretion, constitutes a material deviation from the requirements of the Solicitation.  Proposals taking such exceptions may, in the County's sole discretion, be deemed nonresponsive. The County reserves the right to request and evaluate additional information from any Proposer regarding Proposer's responsibility after the submission deadline as the County deems necessary.

The Proposer's proposal will be considered a good faith commitment by the Proposer to negotiate a contract with the County, in substantially similar terms to the proposal offered and, if successful in the process set forth in this Solicitation and subject to its conditions, to enter into a contract substantially in the terms herein.  Proposer proposal shall be irrevocable until contract award unless the proposal is withdrawn.  A proposal may be withdrawn in writing only, addressed to the County contact person for this Solicitation, prior to the proposal due date and time, or upon the expiration of 180 calendar days after the opening of proposals.

As further detailed in the Proposal Submittal Form, Proposers are hereby notified that all information submitted as part of, or in support of proposals will be available for public inspection after opening of proposals, in compliance with Chapter 119, Florida Statutes, popularly known as the "Public Record Law."

Any Proposer who, at the time of proposal submission, is involved in an ongoing bankruptcy as a debtor, or in a reorganization, liquidation, or dissolution proceeding, or if a trustee or receiver has been appointed over all or a substantial portion of the property of the Proposer under federal bankruptcy law or any state insolvency law, may be found non-responsible.

To request a copy of any code section, resolution and/or administrative/implementing order cited in this Solicitation, contact the Clerk of the Board at (305) 375-5126, Monday- Friday, 8:00 a.m. – 4:30 p.m.

## 1.4    Aspirational Policy Regarding Diversity

Pursuant to Resolution No. R-1106-15, Miami-Dade County vendors are encouraged to utilize a diverse workforce that is reflective of the racial, gender and ethnic diversity of Miami-Dade County and employ locally-based small firms and employees from the communities where work is being performed in their performance of work for the County.  This policy shall not be a condition of contracting with the County, nor will it be a factor in the evaluation of solicitations unless permitted by law.

## 1.5    Cone of Silence

Pursuant to Section 2-11.1(t) of the Code of Miami-Dade County, as amended, a "Cone of Silence" is imposed upon each RFP or RFQ after advertisement and terminates at the time a written recommendation is issued.  The Cone of Silence prohibits any communication regarding RFPs or RFQs between, among others:

- potential Proposers, service providers, lobbyists or consultants **and** the County's professional staff including, but not limited to, the County Mayor and the County Mayor's staff, County Commissioners or their respective staffs;
- the County Commissioners or their respective staffs **and** the County's professional staff including, but not limited to, the County Mayor and the County Mayor's staff; or
- potential Proposers, service providers, lobbyists or consultants, any member of the County's professional staff, the Mayor, County Commissioners or their respective staffs **and** any member of the respective Competitive Selection Committee.

The provisions do not apply to, among other communications:

- oral communications with the staff of the Vendor Services Section, the responsible Procurement Contracting Officer, provided the communication is limited strictly to matters of process or procedure already contained in the Solicitation document;
- oral communications at pre-proposal conferences and oral presentations before Competitive Selection Committees during any duly noticed public meeting, public presentations made to the Board of County Commissioners during any duly noticed public meeting;
- recorded contract negotiations and contract negotiation strategy sessions; or
- communications in writing at any time with any County employee, official or member of the Board of County Commissioners unless specifically prohibited by the applicable RFP or RFQ documents.

When the Cone of Silence is in effect, all potential vendors, service providers, bidders, lobbyists and consultants shall file a copy of any written correspondence concerning the particular RFP or RFQ with the Clerk of the Board, which shall be made available to any person upon request. The County shall respond in writing (if County deems a response is necessary) and file a copy with the Clerk of the Board, which shall be made available to any person upon request. Written communications may be in the form of e-mail, with a copy to the Clerk of the Board at clerkbcc@miamidade.gov.

All requirements of the Cone of Silence policies are applicable to this Solicitation and must be adhered to. Any and all written communications regarding the Solicitation are to be submitted only to the Procurement Contracting Officer with a copy to the Clerk of the Board. The Proposer shall file a copy of any written communication with the Clerk of the Board. The Clerk of the Board shall make copies available to any person upon request.

## 1.6 Communication with Competitive Selection Committee Members

Proposers are hereby notified that direct communication, written or otherwise, to Competitive Selection Committee members or the Competitive Selection Committee as a whole are expressly prohibited. Any oral communications with Competitive Selection Committee members other than as provided in Section 2-11.1 of the Code of Miami-Dade County are prohibited.

## 1.7 Public Entity Crimes

Pursuant to Paragraph 2(a) of Section 287.133 of the Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a proposal for a contract to provide any goods or services to a public entity; may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work; may not submit proposals on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and, may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 of the Florida Statutes for Category Two for a period of thirty-six (36) months from the date of being placed on the convicted vendor list.

## 1.8 Lobbyist Contingency Fees

a) In accordance with Section 2-11.1(s) of the Code of Miami-Dade County, after May, 16, 2003, no person may, in whole or in part, pay, give or agree to pay or give a contingency fee to another person. No person may, in whole or in part, receive or agree to receive a contingency fee.

b) A contingency fee is a fee, bonus, commission or non-monetary benefit as compensation which is dependent on or in any way contingent upon the passage, defeat, or modification of: 1) any ordinance, resolution, action or decision of the County Commission; 2) any action, decision or recommendation of the County Mayor or any County board or committee; or 3) any action, decision or recommendation of any County personnel during the time period of the entire decision-making process regarding such action, decision or recommendation which foreseeably will be heard or reviewed by the County Commission or a County board or committee.

**1.9**     <u>**Collusion**</u>

In accordance with Section 2-8.1.1 of the Code of Miami-Dade County, where two (2) or more related parties, as defined herein, each submit a proposal for any contract, such proposals shall be presumed to be collusive. The foregoing presumption may be rebutted by the presentation of evidence as to the extent of ownership, control and management of such related parties in preparation and submittal of such proposals. Related parties shall mean Proposer, the principals, corporate officers, and managers of the Proposer; or the spouse, domestic partner, parents, stepparents, siblings, children or stepchildren of a Proposer or the principals, corporate officers and managers thereof which have a direct or indirect ownership interest in another Proposer for the same contract or in which a parent company or the principals thereof of one Proposer have a direct or indirect ownership in another Proposer for the same contract. Proposals found to be collusive shall be rejected. Proposers who have been found to have engaged in collusion may be considered non-responsible, and may be suspended or debarred, and any contract resulting from collusive bidding may be terminated for default.

## 2.0 SCOPE OF SERVICES

### 2.1 Background

The Miami-Dade Water and Sewer Department (MDWASD) is an enterprise fund operation of Miami-Dade County. MDWASD provides potable water & wastewater collection services to over 2.3 million residents and visitors through approximately 470,000 metered accounts located within the County (see Attachment A - Miami Dade Water & Sewer Service Area map). A total of thirty-five (35) meter readers are assigned to read the 470,000 accounts either quarterly or monthly. The service area is split into various reading cycles and routes are read each day throughout the month. The current meter infrastructure incorporates a combination of manually read meters with readings captured via handheld reading devices. The County is seeking a turn-key Advanced Metering Infrastructure (AMI) solution (Solution), including, but not limited to, the supply of all tools, equipment, and labor to install, start up, and implement the AMI solution for the Miami-Dade County Water and Sewer Department (MDWASD).

### 2.2 Objectives

The County seeks to convert the existing water meters and meter reading system to a "state of the art" Solution that leverages smart devices to improve the County's water and sewer operations. The Solution will include all hardware, cloud-based software, equipment, materials, labor, installation labor, related services including testing, supervision, project management and all other items necessary to install an integrated turnkey Solution for the County. The County is seeking a single Solution, however, it is requested that implementation be completed to allow future Water and Sewer expansion.

Key objectives of this project are as follows:

- Collect and store hourly meter reading data for all 480,000+ water meters in the MDWASD service area.
- Improve non-revenue water losses through enhanced analytics
- Improve customer service and experience.
- Allow for monthly billing of customers
- Improve the meter-to-cash process.
- Provide a customer facing portal for customers to view their water usage
- Provide for expandability to connect to various sensors, for future expansion.

### 2.3 Current Environment

The Miami-Dade Water and Sewer Department (MDWASD) owns and operates three regional water treatment plants and provide potable water to the over 2 million residents and visitor to the county through over 480,000 metered service connections. Currently, the MDWASD employee thirty-five (35) meter readers to read all of the meters manually. MDWASD has been testing AMI for over 10 years, and currently maintains limited production system with approximately 5,000 meters.

### 2.4 Components & Functionality

The County is seeking a fully cloud-based and fully integrated turn-key AMI Solution to provide the County with comprehensive monitoring, reporting, and auditing capability to facilitate and optimize user and customer functionality. The County requires the use of a reliable, proven state-of-the art technology for all of the components of the Solution.

The selected Proposer shall install all required communication equipment, provide an AMI headend system, replace or retrofit all of the water meters throughout the MDWASD service area, install all endpoints, and replace all meter box covers, as required, ensuring that all meters and endpoints are communicating properly. All existing meters and registers shall be stored on site for inspection for at least one billing cycle (defined as a quarter). If any discrepancies are found the meter must be made available for inspection and can be disposed after the discrepancy is resolved. MDWASD shall dispose or sell the materials. No addditional payment for storage and handling of equipment.

The proposed Solution should include the following functionality/components to support the described operational needs of the County:

1. Provide a fully Turnkey AMI solution that provides Network as a Service, both Cellular and Fixed Network solutions are allowed.
2. Advanced, two-way communication technology that is well established in the water sector, with at least 2 million units of the proposed technology deployed and currently in use.
3. System that can integrate with the MDWASD billing system, which will be upgraded in Q1 of 2023 from its current on-prem version - Oracle's Customer Care and Billing version 2.4 - to Oracle's Customer Cloud Services; and with other third-party applications, such as WaterSmart.
4. System that is expandable, to be used with other third-party hardware, such as acoustic leak detection, pressure monitoring, water quality, etc.
5. System that collects at least 1 reading per hour.
6. System that collects at least 99% of all readings each day over 72 Hours.
7. System, including battery-powered devices, shall have a twenty (20) year lifespan.
8. System must be meter agnostic, and capable of functioning with all approved meters.
9. Provide an in-house or third-party Customer Interface solution as part of the proposal. WASD may, at its sole discretion, decide to utilize this solution or procure another third -party customer interface. The customer interface solution provided in the proposal shall only charge WASD for accounts that are using the provided solution.
10. Proposer shall acknowledge by responding to this solicitation that supply chain and/or pandemic-related issues shall not constitute Force Majeure or an allowed delay for the project.
11. The system shall provide ancillary notifications of leaks, tampering, theft, high consumption, and low consumption. The system shall also provide trending and analysis features for user patterns.
12. District Metering Areas can be provided, where applicable.
13. Provide a mobile or handheld backup for the AMI network that can also perform system diagnostics.
14. Communications network linking of all the above equipment.
15. Software as a service (SaaS) through a cloud-based service that includes separate production, development and disaster recovery environments.
16. Network as a service (NaaS) provided by dedicated telecommunication personnel.
17. Ability to separately configure the Solution for County business rules.
18. Store meter data including date and time stamps in non-volatile memory for a minimum of thirty (30) days.
19. Greater than 2:1 endpoint to collector/tower average redundancy across the system and a minimum of 2:1 endpoint to collector tower redundancy per endpoint.

The County is seeking a Solution to meet operational needs, inclusive of the following:

- Be a combination of equipment, subsystems, and supporting infrastructure that allows for the collection of hourly meter readings, provides enhanced analytics, and provides for monthly billing of customers.
- Monitor all water meters and provide alerts and reports indicating potential leaks, abnormal use patterns, and use on closed accounts.
- Allow for information to be provided to MDWASD customers.
- Be sufficiently robust to simultaneously handle normal South Florida weather patterns and hurricane/storm events

### 2.4.1   General Functionality
The Solution should:

- Integrate with the MDWASD billing system – currently Oracle Customer Care & Billing (CCB), but planned to be upgrade to Oracle Customer Cloud Service (CCS) during CY 2023/2024.
- Ensure compliance with Appendix C (Cloud Service Usage Policy)
- Ensure flexibility for any future need to update, upgrade, and/or expand the system readily (either additional lanes or additional facilities).
- Be fully protected against and not affected by weather/environment conditions, including but not limited to temperature extremes, humidity, rain, dust, RFI/EMI, salt spray, and static electricity.

### 2.4.2   Industry Standards

The County is seeking a design and installation of the proposed Solution should conform to the following referenced codes, regulations, and standards as applicable:

- All Solution equipment shall be new, in current production, and the standard products of a manufacturer.
- All Solution equipment shall be certified with a FCC label as conforming to rigid Electromagnetic Compatibility (EMC) requirements for electronic emissions, immunity and harmonics.
- Federal, State, and Local laws, regulations, and codes.
- ISO 9001 quality assurance standards and UL Mark or equivalent for quality control.
- ISO 27001 or SOC2 compliant for data management.
- Be UL or equivalent listed.

## 2.5   Experience, Qualifications & Key Personnel

### 2.5.1   Proposer Experience / Qualifications / Background / Reference Information

a. PROPOSER shall present an advanced, two-way communication technology that is well established in the water sector, with at least 2 million units of the proposed technology deployed and currently in use.

b. PROPOSER shall provide a company overview for the PRIME and SUBCONTRACTORS.

c. PROPOSER shall submit a detailed statement of their experience, qualifications, and background for providing MDWASD a first-in-class AMI system in this solicitation, of a similar size and scope.

d. PROPOSER shall state how long they have been in business under the same business name and owner/management structure, if they have ever been terminated on an awarded contract, or if they have otherwise failed to complete any work awarded.

e. PROPOSER shall list three (3) recent contracts within the past five (5) years of at least 100,000 endpoints under which you provide the same hardware and network operations as the specified proposed AMI system that is consistent with the general requirements being proposed for this solicitation. These recent contracts must be executed; however, may be in the project deployment phase. For each contract, indicate contract amount, number of endpoints, unique applications beneficial to the utility, project location, and date completed.

f. Each PROPOSER shall submit a minimum of three (3) references within the past five (5) years and with at least 50,000 endpoints and application (coastal, high urban density, high heat, pit-set environment, and humidity) demonstrating the successful implementation of the the same hardware and network operations to the specified AMI system that is consistent with the general requirements being proposed for this solicitation. All three references must be fully deployed and in operation. Each reference shall include the following:
   a. Name of the client company, contact names, addresses, telephone/ fax numbers, the dollar amount of contracts, and dates of service.
   b. Scope of Work, types of services performed, and the number of full-time staff provided.

g. Each PROPOSER shall submit a minimum of three (3) references within the past five (5) years and with at least 50,000 endpoints demonstrating the successful implementation of a Turn Key AMI solution under which you provide the same hardware and network operations as the proposed AMI system that is consistent with the general requirements being proposed for this solicitation. All three references must be fully deployed and in operation.

h. MDWASD is looking for a 20-year solution that meets the longevity goals of the County and Utility alike. Please describe in detail all versions of AMI systems your Company has provided to the industry in the last 10 years.

i. The PROPOSER or a SUBCONTRACTOR must have a Florida contractor's license.

j. The PROPOSER or a SUBCONTRACTOR must have a Plumber's License.

### 2.5.2 Proposer Key Personnel and Operations Information

a. The PROPOSER shall provide relevant information for members of the recommended implementation team as requested below.

b. Implementation Team: Details of all significant participants to be involved in the implementation of this project. Indicate expertise, education, experience, knowledge, qualifications, and certifications to demonstrate the PROPOSER's ability to complete the scope of work

c. Team Structure: An organizational chart indicating the reporting structure of the Implementation Team and the role of each member. Also, indicate all external entities which will provide components and/or services to the project, and the basis of their business relationship with the PROPOSER.

d. A description of the role of each staff member who will be responsible for handling and monitoring the Contract.

e. A list of projects of a similar nature in which each staff member has been involved as well as the details of the project.

## 2.6 Project Approach & Understanding

The PROPOSER shall provide a detailed narrative description, graphics, and timeline, of its approach and methodology for implementing its AMI system throughout MDWASD's service area. Additionally, focusing on the requirements of the overall project, the PROPOSER shall provide details including, but not limited to, the following:

a. Propagation study or cellular coverage analysis showing Greater than 2:1 endpoint to collector/tower average redundancy across the entire system and a minimum of 2:1 endpoint to collector tower redundancy per endpoint.

a. Recommended System Architecture: Provide all necessary narrative, diagrams, and supplemental information to fully explain the architecture of the technology that will provide a full two-way capable Advanced Metering Infrastructure system for the entire MDWASD service area. Provide details of each component. Also, clearly indicate which components will be necessary to satisfy the requirements of the initial phase.

b. Pre-Installation Survey: Provide a Pre-Installation survey of all services. The survey shall include meter size and type, box and lid material, box cleaning requirements, and geospatial data (accurate to within 3 feet of the meter location) to be integrated with the GIS. The pre-installation survey shall also identify lead and copper services, both private and public side, within the meter box.

c. Communication/Frequency Details: Provide details of the communications architecture recommended by the PROPOSER to accommodate effective and uninterrupted communication between the endpoint and network architecture. Indicate specifics of methodology, frequencies, license requirements, duration and amount of data that can be stored and retrieved, etc. Include the number of collectors, repeater sites, and backhaul requirements (as applicable) at each location where applicable. The supporting propagation study results shall be submitted. Please identify any unique attributes to the communication platform proposed.

d. Component Specifications recommended: Provide details of make, model, and version for each component included in the recommended architecture. The PROPOSER shall submit proof of interoperability of components.

e. Security: The PROPOSER shall include in their proposal their approach to data and system security.

f. Project Timeline: The PROPOSER shall include a timeline that indicates the tasks necessary for the successful implementation of all components as outlined in the Scope of the initial phase as defined in Section 2.6 – Proposed Schedule. The schedule shall assume monthly deliveries of 8,000 – 10,000 meters up to a total of 490,000 where meter size and port type for each delivery will be provided by the COUNTY.

g. Satisfaction of Requirements: The PROPOSER shall complete and submit the Satisfaction of Requirements form included as APPENDIX A. A section is provided on the right side of the form for explanations or clarifications necessary to ensure a complete understanding of the information submitted. The PROPOSER shall provide the information as it relates to the specific technology and configuration that is being recommended. Any exceptions taken shall be specifically identified.

h. Warranty: The PROPOSER shall state its warranty and/or guarantee policy concerning each item of the proposed equipment. The procedure for submitting warranty claims must also be provided. Attach a copy of the Manufacturer's Warranty. The PROPOSER shall be an authorized distributor or manufacturer capable of processing warranty claims for the equipment proposed. If not the manufacturer, the PROPOSER must provide written evidence to support authorization.

i. Disaster Recovery Standards: The PROPOSER shall provide recommended recovery strategies for all components being recommended. Additionally, provide specifics of the Hosted Server environment to indicate standards related to point of contact, response time, encryption, security, use of diagnostics, redundancy, and fail-over. The PROPOSER shall also provide a copy of the Hosting Agreement required for such service.

j. Staff Training Plan: The PROPOSER shall include a detailed training plan to fully educate staff in the operations of the AMI system. Training shall be targeted for field staff separate from office/billing staff. A variety of training options may be utilized; however, user manuals shall be provided for reference.

k.  Integration Plan: The PROPOSER shall provide a plan fully detailing how the system will be integrated with the MDWASD billing system, which will be upgraded in Q1 of 2023 from its current on-prem version - Oracle's Customer Care and Billing version 2.4 - to Oracle's Customer Cloud Services;, and with other third-party applications, such as WaterSmart.

l.  Change Management Plan: The PROPOSER shall provide a full change management plan for the business process affected by AMI system. The plan shall be developed in concert with WASD personelnel, and encompass, at a minimum, back office overhaul, repurposing of staff, meter data management systems, customer interface, protocols and procedures for alarms and notifications, and integration into asset management or other relevant databases. (this implementation will have a significant change in the operations and business processes of WASD. There can be an HR/unions sub-component here or that may be treated as a separate item altogether)

m.  Public Communication Plan: The PROPOSER shall provide a public information plan with a dedicated public information officer. The plan shall enumerated any additional assets or resources that will be provided to ensure a seamless installation and transition phase. The plan will account for addressing customer concerns both proactively and by the use of a call center if required. The plan shall also require engaging stakeholders with printed and video material, as well as engaging with the WASD Public Information Officer to establish a social and earned media presence. (the public will need to be informed at numerous points in the project)

n.  QA/Testing Plan: The PROPOSER shall provide a testing plan prior to the full deployment of meters and register retrofits. The plan shall commence after the integration phase and will serve as verification of successful system integration, as well as test the system communication across a variety of environments. The plan shall at a minimum encompass a fully representative test deployment to account for the full meter size distribution, entirety of the geographical area, differing environments (high ground water vs pit sets along the cutler ridge), urban vs suburban environments, and any other concernse that may be presented by the PROPOSER or WASD. The test plan shall account for a minimum of 500 meters or any amount necessary to account for the varying factors described above, the minimum of the two. The testing phase shall also be in place for a minimum of two bill cycles or as many as are required to authenticate a successful deployment and integration.

o.  QA/QC Plan: The Proposer shall provide a fully detailed QA/QC plan that will aligingn with their manufacturing certification and best practices and shall be developed in tandem with WASD requirements to ensure that proper controls are kept throughout the entire project.

The proposer shall develop a project approach and understanding that elaborates the PROPOSER's Turn-Key Solution to the project.

a.  The PROPOSER shall provide an Advanced Metering Infrastructure (AMI) system to the Miami-Dade Water & Sewer Department (MDWASD) as more specifically described herein. Miami-Dade County (County) desires to improve the efficiency of collecting meter read data, streamlining the billing process, and for enhancing the utility's interface with its customers by selecting a PROPOSER with Advanced Metering Infrastructure which will be used throughout the MDWASD service area.

b.  This competitive process is intended to select a future Advanced Metering Infrastructure (AMI) system which will be used throughout the MDWASD service area. Due to budget and time constraints, the conversion of the entire service area will not be possible in one budget year. The COUNTY anticipates the completion of the initial phase will take no longer than one (1) year. All future phases of the installation will utilize the technology selected in this solicitation.

c.  Proposed Schedule

| Phase | Description |
|---|---|
| 0 | • Project start-up<br>• AMI network installation<br>• Billing and other system integrations<br>• Employee training<br>• 10,000 endpoint initial deployment<br>• Preliminary acceptance |
| 1 | • Deploy 100,000 endpoint |
| 2 | • Deploy 100,000 endpoint |
| 3 | • Deploy 100,000 endpoint |
| 4 | • Deploy 100,000 endpoint |
| 5 | • Deploy remaining meters<br>• Project close-out and final acceptance |

d. Other items to discuss in the approach include, but are not limited to:
    a. Communications Infrastructure (collectors) installed by the PROPOSER to capture reading data within the boundaries of Miami-Dade County. (See Attachment A - Miami Dade Water & Sewer Service Area map with marked coverage area)
    b. PROPOSER hosted server/data repository environment with the capability to transfer reading data to the MDWASD enterprise billing system.
    c. Web-based access to hosted customer interface software that includes Multi-Factor Authentication
    d. System implementation services
    e. Training for both software and field installation/connectivity
    f. Operational and user manuals for office and field staff
    g. Transfer data openly to third third-party software platforms
    h. Warranty and maintenance service for purchased components

## 2.7     Water Meters & Interoperability

The PROPOSER shall:

a. Comply with all requirements of approved water meters for this project.
b. Comply with all requirements of meter register retrofits for this project.

### 2.7.1    Water Meters

a. The PROPOSER shall provide the County with all water meters that are to be used during this project, as well as registers for Badger Recordall series positive displacement meters to be used to retrofit exisiting meters in the MDWASD service area.
b. The following water meters are approved for use in this project.

| Manufacturer | Model | Sizes |
|---|---|---|
| Badger | E-Series | 5/8"x3/4" – 10" |
| Honeywell (Elster) | EvoQ4 | 2" – 10" |
| Master Meter | Sonata | 5/8"x3/4" – 1" |
|  | Octave | 2" – 10" |
| Neptune | Mach10 | 5/8"x3/4" – 10" |
| Sensus | iPERL | 5/8"x3/4" – 1" |
|  | Omni C2/T2 | 2" – 10" |
| Zenner | Stealth (ZSU) | 5/8x3/4" – 10" |

c.  All meters and registers shall be delivered with AMI cables factory installed and fully potted/sealed to prevent moisture intrusion.  No field splicing or other connectors are allowed between the meter and the terminal connector to the endpoint.
d.  All meters and registers shall meet the following minimum specifications:
    a.  Meter body/flow tube for 5/8x3/4" and 1" meters shall be NSF 61 brass, stainless steel, or approved polymer/composite material.
    b.  Meter body/flow tube for 2" through 10" meters shall be NSF 61 brass, stainless steel, cast/ductile iron with a polymer coating, or approved polymer/composite material with metallic flanges.
    c.  All meters shall be standard AWWA lay lengths:
        i.  5/8x3/4":          7.5"
        ii.  1":               10.75"
        iii.  2":              17" (Flange End)
        iv.  3":               12"
        v.  4":                14"
        vi.  6":               18"
        vii.  8":              20"
        viii.  10":            17.75"
    d.  Gallon registration
    e.  8-dial encoder output
    f.  Standard register/output formats:
        i.  5/8x3/4" and 1"
            1.  0,000,000.0
        ii.  1.5" – 3"
            1.  00,000,000
        iii.  4" – 10"
            1.  000,000,00 (x10)
e.  The estimated number of meters and/or registers required for this solicitation are as follows
    a.  Registers for recently installed Badger positive displacement meters:
        i.  Badger Recordall M-25 HRE Register (5/8x3/4"):      115,000
        ii.  Badger Recordall M-55 HRE Register (1"):            5,000
        iii.  Badger Recordall M-120 HRE Register (1.5"):        3,000
        iv.  Badger Recordall M-160 HRE Register (2"):           4,000
    b.  Meters:
        i.  5/8x3/4" Meters:        330,000
        ii.  1" Meters:             8,500
        iii.  2" Meters:            14,500
        iv.  3" Meters:             10
        v.  4" Meters:              370
        vi.  6" Meters:             125
        vii.  8" Meters:            30
        viii.  10" Meters:          20
f.  All meters are to be factory tested, and all test scores forwarded to the Department in electronic format.
g.  A minimum of five percent (5%) of all meter shipments shall be subject to testing by the Department, before approval for use.

## 2.7.2    Interoperability with Different Registers

Provide a table showing the degree of compatibility of PROPOSER's endpoints with all makes and models of water meters currently available in the U.S. market, including, at a minimum, the information requested in Table below. The proposed solution must be compatible with all registers listed in the table.

| Manufacturer | Register model | Degree of compatibility<br><br>1- No programming req'd<br>2- Routine programming of endpoint or meter req'd<br>3- Different endpoint req'd<br>4- Technically feasible, non- routine modification (describe)<br>5- Infeasible | Functionality<br><br>1- All features operational<br><br>2- Some functions inoperable (describe) | Support<br><br>1- Cross- licensed<br>2- Not licensed or supported, no effect on warranties<br>3- Warranties voided |
|---|---|---|---|---|
| Badger | ADE | | | |
| Badger | E-Series | | | |
| Badger | HRE | | | |
| Hersey | Translator | | | |
| Kamstrup | FlowIQ | | | |
| Master Meter | AccuLinx | | | |
| Metron | OER | | | |
| Neptune | E-coder | | | |
| Neptune | Pro-read | | | |
| Performance | ETR | | | |
| Sensus | E-Register+ | | | |
| Sensus | iPERL | | | |

## 2.8    Endpoints

### 2.8.1    Endpoint Performance Specifications
a.  Receive meter data from water meters equipped with absolute encoder registers. The PROPOSER shall state which brands and models of encoder registers are compatible with the proposed radio module.
b.  Communicate via a strong, secure, and reliable radio frequency that includes provisions to ensure data transmission accuracy and immunity from outside interference as well as fading and other forms of signal degradation or attenuation to prevent accidental loss of customer or meter reading data.
c.  The COUNTY may procure water meters separate from the AMI solicitation. Please detail connector solutions outside the PROPOSER's meter lines. Please include whether single or dual connection options are available for transmitting up to two (2) meter readings and alarms per transmission, including any cost savings and effects to battery life associated with this orientation.
d.  Identify customer leaks, tamper, and backflow parameters when connected to an encoded register. The alarm parameters shall be configurable and programmed for each meter. This feature must work with any brand of encoded register. These parameters must be capable of being changed through the network after installation is completed.
e.  Please detail any programming adjustments that may be needed to retrofit existing encoder outputs.
f.  Designed and constructed for installation in meter pits, with potential for frequent flooding, and large temperature variations, and high humidity.
g.  Housed in a single package designed for rugged, harsh environments and capable of complete submersion in water without damage.
h.  Function accurately and not be damaged when an operating temperature range exceeds -40 degrees C to +70-degree C.
i.  Operate in the above conditions and have a minimum battery life of 20 years.
j.  Transmit battery life data to the Host System alerting of low battery levels for preemptive preventative maintenance.
k.  Store meter data including date and time stamps in non-volatile memory for a minimum of thirty (30) days.
l.  Two-way communication with a minimum capability of remote firmware updates, from the AMI Headend system.
m.  Employ actionable alerts including each of the items listed below:
    a.  Tamper Alert or Meter disconnected
    b.  Bad Read or Communications Failure
    c.  Leak (Continous Usage) Detected
    d.  Reverse Flow/Backflow
    e.  High Flow Rate Detected – Specifics set in host software
    f.  Battery Health
n.  Update each AMI Module's clock date & time settings to match the reference date & time that shall be regularly provided to the meter stored in the transmitter's memory. This update shall be part of the required Two-Way Communication
o.  Provide data about the AMI Network and handheld collectors in the field for use in diagnostics and maintenance activities.
p.  Be warranted free from defects in material and workmanship for a minimum of twenty (20) years. In the event any defects are found within the warranty period, the PROPOSER shall correct the defect at its own expense.
q.  End points provided shall be warranted free from defects in material and workmanship, including battery life, for a minimum of fifteen (15) years and provide a prorated warranty for the following five (5) years for a total of twenty (20) years. In the event any defects found within the warranty period, the PROPOSER shall correct the defect at its own expense or prorated expense for the last five.
r.  Proposed Quantities:
    a.  If PROPOSER only offers single port (1 meter per endpoint)
        i.  480,000
    b.  If PROPOSER offers both single port and dual port (2 meters per endpoint)
        i.  Single:  220,000
        ii.  Dual:    130,000

## 2.9 AMI Network / NaaS / SaaS

### 2.9.1 AMI Network Performance Specifications

a. The intent of the AMI Network Performance specifications is to describe a system of equipment capable of performing specified tasks. Because of the variety of approaches to designing a system of equipment to perform certain tasks, it is not the intent of this description to specify any specific design, but rather to specify features preferred and descriptive data felt to be common to most designs. The PROPOSER shall submit a price for equipment that is fully capable of performing the specified tasks. Any deviations from the requirements shall be identified in Appendix A

b. The AMI Network shall:

    a. Consist of a reliable and tested network to ensure billing data quality along with other Smart Utility/Smart City capabilities. Please describe how your network meets these specifications.

    b. Include a 99.0% billing read success over 72 hours.

    c. Use state-of-the-art data security techniques to prevent unauthorized access to the data

    d. Use AC and solar-powered units and optional battery backup if applicable.

    e. Allow self-diagnosis of any problems associated with the backhaul of the communication and the ability to automatically seek an alternate communication path if the initial daily or real-time upload is unsuccessful.

    f. Accommodate over-the-air firmware and software upgrades.

    g. Have icons that permit viewing the operational health of the system components.

    h. Be capable of changing read interval sampling or have standard 15 -minute interval sampling, alarm frequency sampling, and communication mode over the air.

    i. Established architecture to include backup/failover options for the entire communication path from the meter to the Meter Data Management System.

c. Please explain the custody of control of your network architecture.

d. Does the proposed Network operate during Emergency Conditions? If so, please describe how this is accomplished.

e. Please describe how the AMI endpoint stores and frequency of delivery of meter data daily to the AMI Network from all the AMI Modules and how this process can maximize read interval success.

f. Please describe the two-way command turnaround time between the endpoint and AMI Network.

g. Please explain the capability of reading in emergency operations conditions. Provide at least one example of a deployed system under which you provide the same network operations as the specified proposed AMI system that is consistent with the general requirements being proposed for this solicitation, and that has sustained a Category IV or greater hurricane. Explain in detail the emergency operations and how long the network was out of service. Explain what if any emergency operations were conducted or were able to be conducted if a prolonged outage had occurred.

### 2.9.2 AMI Software as a Service / Network as a Service (SaaS / NaaS), Software and Customer Interface

a. The PROPOSER shall provide a managed hosting service, where it will own and manage the server hardware and software including monitoring to ensure the server continues to work effectively, provide backup services, installation of security patches, and various levels of technical support. The PROPOSER-hosted solution shall utilize a secure web-based application.

b. The Host Software solution shall utilize a secure web-based application user interface. The PROPOSER shall provide the encryption standard being utilized by the Saas/NaaS solution

c. The Host Server shall act as the central collection point for the data within the system. The server collects data from all of the remotes and stores the gathered data in a secure database. Once the data is stored and analyzed on the server, the data shall be available for display via an easy-to-use web-based graphical interface.

d. The Host Server shall manage and archive data for a minimum of two (2) years to be accessed by any COUNTY computers, or handheld devices both locally and remotely via the web.

e. The data shall be available via a user interface that will allow for analysis, as well as bill generation.

f. The Host system software shall be web browser-based. Standard interfaces shall be available to connect to current and future MDWASD applications.

g. The Host Software shall have a flexible meter reading data format that is compatible with MDWASD's current billing application. Data transfers shall utilize a secure transfer protocol (SFTP) utilizing American Standard Code for Information Interchange (ASCII) file transfers, or other secure methods that are mutually accepted.

h. The Host Software shall be used to generate reports, view demand graphs, determine usage patterns, and request the transfer of readings to billing software.

i. The Host Software shall use information from alerts uploaded in the data and have the ability to generate specific e-mail alerts or short message service (SMS) messages for each status code, configured by the User interface.

j. Each AMI endpoint-generated alert shall be accompanied by a duration for which the alert has been active, and which shall be stored and optionally sent out by the server sent to the AMI Head End System

k. The User interface shall permit the sending of alert outages, tampering, and out-of-range system operating parameters to appropriate utility personnel via cell phone or e-mail.

l. The User Interface shall allow the utility to correlate consumption with meter data available on the user interface.

m. The PROPOSER shall offer a native-born integrated consumer portal for customer access to consumption data or provide a third-party solution. The proposer shall also be able to integrate with the provider of the COUNTY's choice.

n. The customer portal shall provide the ability for the customers to see their usage, compare their current usage with previous periods, configure individual alerts, and set monthly and yearly budget goals.

o. Customers shall have access to simple canned queries and the option to select more advanced queries for more detailed analysis.

p. Reports shall be available in graphical and table views for reading and consumption for various intervals. Graphs shall have the ability to change views, daily/weekly/monthly.

q. The customer portal home page shall include a display that can be configured for the utility. The display shall have the ability to show informational alerts from the utility.


## 2.9.3    Interfaces

The proposed Solution should provide one-way and bi-directional interfaces to various third party and internal County systems through open Application Programming Interface (API). All data derived from the Solution shall be made available via the API. Proposer should conduct a thorough review / assessment of all interfaces to be provided. Noted below are the principal recognized application interfaces required for the proposed Solution.


**Key Interface related Terms**

The column heading **"Req'd for Go-Live"** indicates the need for the specific interface to be operational with the initial deployment of the Solution.

The column heading "Frequency of Data Flow" describes the anticipated occurrence or regularity of the interface's data transfer.

- **Real time**: Indicates an interface that must operate dynamically, on demand between systems.
- **Batch:** Indicates a grouped, multiple record/transaction based interface between systems. Typically file based in nature, and often on a predetermined interval (e.g. hourly, daily, weekly, monthly, etc.)

The column heading **"Mode"** describes the direction of the interface between the Solution and the County systems.

- **Data Exchange**: Signifies a bidirectional functional interface between the application and the Solution where data is exchanged.
- **One-way / Solution:** Signifies a unidirectional interface in which data is pushed from the County to the Solution.
- **One-way / County:** Signifies a unidirectional interface in which data is pushed from the Solution to the County.

| Application | Req'd for Go-Live | Description | Frequency of Data Flow | Mode |
|---|---|---|---|---|
| Oracle CCB | Y | MDWASD's billing system | Real time | Data Exchange |
| Innovyze | Y | MDWASD's planning software | Batch | One-way / Solution |
| Flow Works | Y | Integration for wastewater AMI technology | Real time | Data Exchange |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

See Appendix B for detailed description of interfaces.

## 2.10   Installation & Meter Box Covers

a. Under this specification, a single PROPOSER shall supply all equipment and labor necessary to install Water Meters, Advanced Metering Infrastructure (AMI) system Endpoints, and Meter Box Covers, as necessary. While the primary function shall be to provide labor for the installation of meters and endpoints, the installation company shall also provide project management, data integration services, and a field service software with a Utility Portal allowing electronic data uploads to billing software, and full transparency of project progress as described herein.

b. The PROPOSER shall employ competent, efficient employees skilled in the work assigned to them. The PROPOSER shall, at a minimum, provide the MDWASD with a list of names, photo identification, background checks, vehicle information, and other required information for the employees performing work. The PROPOSER and SUBCONTRACTORS may, at WASD's sole discretion, be required to submit and clear WASD's background check procedures for onsite consultants and contractors.

c. The PROPOSER employees shall always display photo identifications clearly. Each photo identification shall have the PROPOSER name, employee's name, title, and signature.

d. All service staff, technicians, drivers, and field supervisors will be equipped with smartphones and/or tablets. Electronic and Wireless Communication, through a cellular network, must be available to the installation team.

e. All the PROPOSER employees shall be neat and presentable always to present a professional appearance. All Employees shall have the same color uniforms including shirts, pants, and jackets. The PROPOSER logo shall be permanently attached to shirts and jackets.

f. The PROPOSER vehicles used for work shall have company logos prominently displayed and shall be registered with the MDWASD.

g. All work shall be performed by competent, skilled personnel, to be conducted in accordance with good trade practices and all applicable codes.

h. PROPOSER must be skilled in handling both small and large water meters, both indoors and outdoors, including confined space meter vaults, ranging in size from 5/8" to 10"

i. The PROPOSER shall be responsible for the proper care and protection of the worksite, for all materials and articles delivered to the site where the PROPOSER will perform the work, until completion and final acceptance of the work. The PROPOSER shall exercise proper precautions and safety measures in performing the work, which shall be in accordance with all applicable laws, rules, and regulations. The PROPOSER shall be responsible for the protection of all persons and/or property at the location in which the work will take place.

j. The PROPOSER shall keep the work site free from unnecessary accumulations of waste materials. Upon the completion of all the work, the PROPOSER installers will be instructed to remove all tools, equipment, and surplus materials, as well as all rubbish and waste resulting from the work. Upon the completion of the work, the work area shall be left "broom clean" or its equivalent, to the reasonable satisfaction of the MDWASD.

k. Please explain your preferred method of endpoint installation in the meter box/lid. Please detail the material of your preferred solution.

**2.10.1    Meter Box Covers**
   a.   Meter box covers will need to be replaced and/or modified as needed to allow for proper radio transmission.  All covers are to be provided by the PROPOSER and shall meet minimum MDWASD specifications and be approved by MDWASD before use.
   b.   Any external parts of an endpoint/antenna must sit flush to the pavement, and not cause a tripping hazard.
   c.   All covers must be radio transparent, manufactured of an approved composite material, be direct drop-in replacements for use in the standard MDWASD meter boxes, and have a minimum Tier-15 load rating.
   d.   Common sizes:
        a.   #36 (10"X15")
              i.   MDWASD drawing W-8446-C
              ii.  Estimated quantity: 25,000
        b.   #37 (11"X18")
              i.   MDWASD drawing W-8446-C
              ii.  Estimated quantity:  25,000
        c.   #38 (13"X24")
              i.   MDWASD standard detail WS 2.10 sheet 2 of 3
              ii.  Estimated quantity:  195,000
        d.   Dual
              i.   MDWASD standard detail WS 2.12 sheet 1 of 2
              ii.  Estimated quantity:  131,000
   e.   Potential Manufacturers/Suppliers
        a.   Armorcast
        b.   DFW Plastics
        c.   Old Castle
        d.   GlasMasters
        e.   Hubbell
        f.   Nicor
        g.   Trumble
   f.   2'x4' Plate Steel covers will require modification and/or hole drilled to allow for an external antenna.
        a.   All external antennas must sit flush to the pavement, and not cause a tripping hazard.   For meter boxes located in green areas, the antenna may protrude up to ¼-inch
        b.   MDWASD standard detail WS 2.17 sheet 3 of 5
        c.   Estimated quantity:  24,000

**2.10.2    Field Service Software (Proposer)**
   a.   The Field Service Software must provide the capability to record, manage, store, retrieve, and access all relevant data for each customer location, including customer signatures.
   b.   The Field Service Software must allow for scheduling of all appointments if required, logging all customer interactions, and handling of service requests.
   c.   The Field Service Software shall send an email or text message to the customer when a required appointment is scheduled as a confirmation, please show a proposed format/Screenshot for this in your response. A second email or text message shall be sent to the customer the day before the appointment as a reminder. Please show a proposed format/Screenshot for this in your response. Finally, a third email shall be sent to the customer on the day of the appointment, when the technician is en route to the location. The third email must contain a picture of the technician that will be completing the installation. Please show a proposed format/Screenshot for this in your response.
   d.   The PROPOSER Shall provide the ability for MDWASD customers to schedule appointments online at their convenience. Once the appointment is scheduled, the customer shall receive an email confirmation of their appointment. The email confirmation shall contain an informational video explaining the installation process
   e.   All account management is to be completed through the Field Service Software. All relevant customer account information and new product data collected after installation must be accessible by all Utility personnel, and project management through the use of a Utility Portal.

**2.10.2.1 Utility Portal**

a. PROPOSER must have a cloud-based Utility Portal made accessible to MDWASD to monitor in real-time the complete installation process.
b. Field Service Software utilized by the technicians must be completely integrated with the Utility Portal to provide the MDWASD real-time updates on the progress of installations.
c. There must be five statuses available on the Utility Portal for all users to quickly review the status of the entire installation project. Please show a proposed format/screenshot for this in your response to include the following:
   a. Completed- Job Done
   b. Validating - Job done awaiting data validation process
   c. Scheduled - Job scheduled in the future
   d. Not Scheduled - Jobs not scheduled
   e. Assigned – Assigned to a technician
   f. In progress – Technician working on meter installation
   g. Incomplete - Jobs that cannot be completed
   h. Canceled – Was scheduled but the customer canceled
d. The Utility Portal must have built-in search/filter capabilities to provide the status of each individual account as shown. Please show a proposed format/Screenshot for this in your response. The Utility Portal must be able to filter account statuses by day, week, month, etc. to monitor the project
e. The Utility Portal must be able to provide a list of accounts that are incomplete and indicate the reasons why they cannot be completed as shown below. Please show a proposed format/Screenshot for this in your response. The reasons for an account being incomplete shall include:
   a. Denial of Access
   b. Meter not Accessible
   c. Meter not Found
   d. Plumbing Conditions
   e. Vacant Property
   f. Change Order
   g. No Show
   h. Miscellaneous
f. Field technicians must have the capability to enter the reason for an account being on hold through the mobile application of the field service software.
g. All incomplete devices, along with the reason they are incomplete shall be listed within the grid data. Please show a proposed format/Screenshot for this in your response.
h. When an installation is completed, an electronic work order must be created and added to the Utility Portal with old and new data, before and after pictures, and a customer signature.
i. SERVICE CALLS - The Utility Portal shall have the ability to track all service calls required when adjustments need to be made to completed installations. Reasons for service calls shall include:
   a. Leaks – Meter is leaking after complete installation
   b. Backwards Meter – Meter installed backward
   c. Endpoint – Radio needs troubleshooting
   d. Property Condition
   e. Low Pressure was reported by customer
   f. Mismatched Data
   g. Meter box
   h. No Water – Water service not returned
   i. Programming
   j. Other
j. All service calls, along with the reason for the service call shall be listed within the grid data. Please show a proposed format/Screenshot for this in your response. An electronic work order for each service call shall be generated, with associated pictures, and accessible through the grid data. All pictures are expandable by clicking on the image within the utility portal.
k. The Utility Portal must be integrated with the MDWASD billing system, with the minimum ability to create a CSV file with all data to be exported to the MDWASD billing software. PROPOSER shall work with the MDWASD billing software company to ensure the format of the export file from the Utility Portal is compatible with the billing software. This shall allow for the electronic transfer of all-new meter data, collected in the field, and uploaded from the Utility Portal to the billing software.

l.   Please indicate the time required to verify the data and make it available to the utility for import in your response.

m.   Utility Portal must provide a view to MDWASD of the product inventory throughout the project. Water meter and endpoint quantities shall be monitored by MDWASD in real-time through the Utility Portal.

n.   The Utility Portal must provide a location for, and MDWASD access to project documents such as contracts, Invoices, prevailing wage payroll, and any other documents required by the MDWASD.

### 2.10.3   Inventory Management

a.   Installation PROPOSER shall provide inventory management through the Field Service Software in conjunction with the Utility Portal.

      a.   Please show a proposed format/Screenshot for this in your response.

b.   Field Technicians shall use bar code scanning technology to enter meter and endpoint data into the Field Service Software. As meters and endpoints are marked installed through the field technician's mobile app, they shall be deducted from the inventory levels.

c.   Installation PROPOSER shall be responsible for receiving material deliveries from AMR/AMI and Meter manufacturers.

d.   Routing of product installation shall be coordinated with MDWASD to avoid interruption of billing schedules.

e.   Video conferencing on tablets/mobile devices shall be available to field technicians for onsite communication and troubleshooting to ensure quality.

f.   PROPOSER must have a dedicated call center (not outsourced) to be able to schedule appointments daily. The call center shall be responsible for contacting customers that whom MDWASD can provide phone numbers.

g.   PROPOSER shall maintain a proper inventory of all water meters and meter box covers that are removed from the MDWASD system, as part of the meter installations, in a secure location.

### 2.10.4   Data Integration

a.   The PROPOSER is responsible for uploading existing customer information files into the Field Service Software.

b.   The PROPOSER is responsible for providing a file to transfer export in a file type of MDWASD's choosing that captures all field data captured collected by the technicians and can be, electronically uploaded to the MDWASD billing software. No manual data entry by Utility personnel shall be acceptable.

c.   The PROPOSER Utility Portal shall provide email notifications to the MDWASD indicating when the billing file is ready for upload to the billing system. All billing file data must be validated by the PROPOSER team and confirmed to be correct before notification is sent to MDWASD.

d.   Digital work orders shall be generated by the Utility Portal, based on information provided by the Field Service Software. All work orders shall contain existing account information from the MDWASD database, new meter, and endpoint data, before and after pictures, and any other pertinent account data. Work orders shall be stored on the Installation PROPOSER's servers for an agreed-upon period after project completion.

### 2.10.5   Quality Assurance

a.   PROPOSER must provide a data validation team responsible for confirming information from the MDWASD database matches the information the field technician finds on location. This is accomplished by the data validation team comparing data in field pictures to the data entered by the field technician.

b.   Field data shall also be validated by uploading a file from the head end system of the Advanced Metering Infrastructure to the Field Service Management software. The Field Service Management software shall then compare field data collected to the data captured by the AMI system ensuring they match.

c.   PROPOSER shall be responsible for confirming AMI endpoints successfully communicate back to the head end of the AMI system.

d.   PROPOSER must conduct mandatory monthly workshops incorporating revised safety procedures, municipality updates, reinforcing Occupational Safety Health Administrative (OSHA) standards in the field and confined space rules and regulations

e.   Field Technician must spend 40 hours in the field and home office including the call center to be crossed trained in all functional areas of the business

f.   Field Supervisors must have 30 hours of Occupational Safety Health Administration (OSHA) training and 8 hours specifically in confined space entry training

g.   Field technicians must have minimally 10 hours of Occupational Safety Health Administration (OSHA) training and 8 hours specifically in confined space entry training

h.   To assure quality, PROPOSER must randomly call customers and conduct field inspections on completed installations

i.   Regular project progress meetings shall be conducted by the PROPOSER with all project constituents to update everyone on project status.

### 2.10.6    Acceptance Testing

a.  Subsequent to final installation of all system components, the PROPOSER shall conduct a preliminary acceptance test plan and shall be based upon the software versions and configurations as proposed. Any failures found during the acceptance testing shall be immediately corrected by the PROPOSER.
b.  As the project develops and the system is purchased, COUNTY reserves the right to coordinate final acceptance testing protocol with PROPOSER. A final acceptance test plan is required before placing the system into service. It is expected that final acceptance testing will commence immediately upon system cutover and proceed for ninety (90) consecutive calendar days without any failures or to the COUNTY's satisfaction. At this time the COUNTY may elect, at its sole discretion, to perform an independent cyber security penetration test of the system.

### 2.10.7    Implementation Services

a.  Implementation services shall be provided to cooperatively design the specific configuration necessary to support MDWASD's business rules and customer service standards.
b.  The PROPOSER shall provide up to fifteen (15) custom reports which may be needed in addition to the standard "canned" reports included with the customer interface software.

### 2.10.8    Technicians

a.  The PROPOSER shall employ competent, efficient employees skilled in the work assigned to them.
b.  The PROPOSER will provide a list to MDWASD of names, photo identification, background checks, vehicle information, and other required information for the employees performing work.
c.  All service staff, technicians, drivers, and field supervisors will be equipped with smartphones and/or tablets and will be using the PROPOSER's proprietary software.
d.  All PROPOSER technicians shall have the same color uniforms including shirts, pants, and jackets. The PROPOSER logo shall be permanently attached to shirts and jackets.
e.  Vehicles used shall have company logos prominently displayed and shall have license plates registered with Miami Dade County
f.  The PROPOSER technicians shall be skilled in handling both small and large water meters, both indoors and outdoors, including confined space meter vaults, ranging in size from 5/8" to 10"

### 2.10.9    Field Tools

a.  All PROPOSER technicians must be equipped with tablets/mobile devices that communicate through a cellular network providing a real-time paperless solution in the field for every installation.
b.  Tablets/mobile devices must be capable of capturing: pictures, meter data, endpoint data, customer information, bar code data, and any other required information through the use of the field service software.
c.  The mobile application on the tablet must allow the installation technicians to access all information including the installer's schedule, office calendar, existing meter and radio data, all account information, and material inventory.
d.  PROPOSER technicians must be equipped with all equipment and software required by the AMI manufacturer to program the Endpoints.

### 2.10.10    Communications & History

a.  Field Service Software shall provide MDWASD with the ability to email, text, or send a voice message to a single customer or a group of customers.
b.  A History of all notifications sent to customers through the Field Service Software via email, text, or voice message shall be stored. MDWASD shall have the ability to access notification history by customer account. That history shall store the date and time of the communication, the subject matter, the content of the notification, and the contact information to which the notification was sent to.
c.  The Field Service Software shall also provide the ability for MDWASD customers to update their contact information electronically. A secure URL shall be provided to the MDWASD's Customers through a method of communication suitable to

the MDWASD. That secure URL shall capture at a minimum, the customer's email, phone, cellular phone, mailing address, and the customer's preferred method of communication.

## 2.10.11  Reports

The Solution should include a fully integrated reports module/functionalities and provide full reporting, with flexibility in content, formatting, and timing of the pertinent operational and management reports with the following capabilities:

### A.  General
The Solution should maintain data without limitation beginning at the Solution Go-Live.
   a. Reports can be scheduled to run and emailed to specified users.
   b. Provides real-time reporting.
   c. Reports (manual and automated) can be run at any time and not impact the system performance.
   d. Reports can be exported to Microsoft Word, Excel, PDF, etc.
   e. Ability to provide and archive equipment alerts due to malfunction or maintenance.
   f. Ability to provide access to administrators to create ad hoc data changes, queries and reports.
   g. Ability to standardize reporting for all locations.

## 2.11     Third-Party Integrations / Warranties / Training

The County is seeking a Solution to meet operational needs, inclusive of the following:
   a. Significantly enhance COUNTY services such as usage data.
   b. Remote activations and deactivations of meters are highly desirable.
   c. Provide the COUNTY's customers with a self-service web portal and e-mail and text notifications, thereby empowering the COUNTY's residents and businesses to control usage, and costs, and to advance "green" initiatives.
   d. Improve the COUNTY's operational efficiency, improve customer satisfaction, and reduce costs through remote transmission and central retrieval of interval data from water meter reads.

## 2.11.1  Third-Party Integrations

   a. The COUNTY desires the selected AMI solution to be capable of employing uses other than obtaining water meter readings, as part of an overall move by the COUNTY to a 'Smart Cities' platform.
   b. MDWASD has existing assets that need to be able to continue operating through the AMI Project. As such, the PROPOSER shall be capable of integrating third-party assets into their technology
   c. PROPOSER's solution shall have the ability to integrate data from third-party providers.
   d. PROPOSER's solution shall be able to provide integration with various third-party sensors, such as:
      a. Acoustic Leak Detection
      b. Flow
      c. Pressure
      d. Level (Water/Wastewater)
      e. Water Quality Monitoring

## 2.11.2  System Documentation and Training

   a. System documentation shall provide operational details for using the AMI system.  This shall include a logical and physical network diagram of all process data flow.
   b. The training shall include detailed field installation, configuration, and troubleshooting for specified staff with a daily agenda and necessary documentation.
   c. The training shall include detailed office/billing training for specified staff to include all aspects of the Customer Interface software.
   d. User manuals shall provide necessary procedures for the Administration, Operations, and Maintenance of the AMI system.
   e. All documentation shall be provided in print and as a pdf.

### 2.11.3    Warranty

The County is requesting a factory warranty to warrant that the Equipment/Hardware components of the Solution are free from defects in design, material, and manufacturing for a minimum of 20 years (10 years full / 10 years prorated) from the date of the County's acceptance of the Solution.  The Proposer should guarantee availability of parts to complete repairs on the Solution for the life of any resultant contract.

### 2.11.4    Ongoing Compliance

The Solution and Proposer shall comply with all industry security standards in effect and at all times throughout the term of any resultant contract. If at any time any of the components of the Solution, including but not limited to Proposer's equipment, hardware, software, or policies, become non-PCI compliant, the Proposer is responsible for all costs related to upgrading the Solution so that compliance is maintained throughout the term of any resultant contract. The Solution must have the following:

1. Any communications into or out of the County's network must be encrypted unless explicitly allowed by ITD's Enterprise Security Office. All subsystems must be able to send logging information into a central logging system for event audit and anomaly detection.
2. During an installation or a major system upgrade, the Proposer must provide implementation manuals and detailed diagram(s) that show all cardholder data flows across the County's systems and networks.
3. The Proposer shall resubmit the aforementioned passing, updated, completed, and signed PCI compliance documents annually to the County.
4. The proposed Solution shall be updated, when required, to remain compliant with all changes to the PCI standards and requirements by the implementation dates mandated by the PCI Security Council and remediate any critical security vulnerabilities within 30 days of identification.

### 2.11.5    Security Requirements

The County is seeking a secure Solution that is consistent with County standards and practices. Proposers should provide detailed explanation for how the Solution meets or does not meet the County security standards in the Proposer Information Section, Attachment B.

### 2.11.6    System High Availability / Performance / Accuracy

1. The Solution shall operate twenty-four (24) hours per day, seven (7) days per week.
2. The Solution should be a high availability/fault tolerant Solution, maintaining availability of 99.99% uptime, calculated annually, not including routine maintenance or administrative procedures to be scheduled during non-business hours with prior approval of the County.
3. The Solution should be designed to effectively mitigate latency and data speed issues.
4. The Solution should have appropriate bandwidth required to ensure optimal performance for concurrent application access and data access for normal daily operational use.
5. Data transfer (Data received, validated and accepted by the head end system from meters/endpoints or other devices or Subsystems) shall be 100%.

### 2.11.7    Implementation Services

The selected Proposer shall be responsible for providing on-site installation and configuration services to include all necessary services required to achieve Go-Live.  Remote implementation services may be considered by the County where deemed appropriate.

**2.11.8   Training Services**

The County is seeking a comprehensive training plan that strives to ensure that departmental operational and technical staff are adequately trained to utilize and support the proposed Solution. The approach and methodology to delivering the required training shall be included in the proposal response. Training shall be provided including but not limited to the following roles: technical staff and application/system administrators. Classes are to be conducted on-site independently for each department, as needed, at specific sites where required to meet training needs and staff schedules. The specific training sites are yet to be determined and will be scheduled based on the selected Proposer's timeline and approach. Any proposed training course must be reviewed and approved by the County project team prior to commencement of that course. Training shall have approximately 100 participants.

The County generally prefers a 'Train the Trainer' approach to delivering required training across a large user base, however prefers that targeted training for staff with specialized roles be provided directly to those users. The County is prepared to work with the selected Proposer to deliver training using the most appropriate methodology. The County anticipates that training will be provided for the following County staff as follows:

**A.   Train the Trainer**
Proposer-provided Train-the-Trainer training, for preparing County staff to deliver training for other users. This is anticipated for roles  where it is not feasible to provide direct training to all staff in those roles, or in roles where it will be beneficial to equip selected staff with the knowledge to train new team members in future without requiring vendor training.

**B.   Technical Staff Training**
The County desires a Proposer-provided classroom-based training program for staff identified as technical problem solvers, configuration specialists, and ITD administrators of the Solution and supporting infrastructure. This should also include training to County ITD development staff who will be responsible for building integrations between the proposed Solution and County applications.

**C.   Training Documentation and Materials**
To meet the needs of the County, end-user training documentation will require customization. The County expects to receive final versions of training materials reflecting any customizations or configuration specific to the County, in editable, electronic formats, using the Microsoft Office suite of applications. The County shall have full authority to edit/customize all Proposer provided end user and system administrator training documentation, and use that material to allow County staff to conduct training sessions in the future. The Proposer shall be responsible for providing sufficient training materials and documents such as:
- Instructor Manual(s)
- Student Training Manual(s)
- All manuals in MS Office format

**D.   Solution Documentation**
The County seeks thorough documentation for the installation and configuration of the proposed Solution.  Solution documentation should be provided in a MS Office format for the County to distribute as needed.

The Proposer should, at no additional charge to the County, provide updated technical Documentation when Solution changes or updates occur such as versions or releases.  All new versions and releases should be accompanied by documentation clearly explaining the new functionality, features, corrections, etc., addressed by the release or version. This Documentation should be consistent in content and appearance with the original Documentation.  Further, the Proposer's online help files should also be updated to reflect system changes and updates.

### 2.11.9   Data Setup and Configuration

The selected Proposer is expected to migrate existing account information data (i.e. customer account data) from the current billing system into the proposed Solution. The selected Proposer will perform the extraction, transformation, and mapping required to prepare data, in a mutually agreed upon file format, for conversion into the proposed Solution.  The selected Proposer shall be responsible for the loading of the data into the proposed Solution.  The County will work collaboratively with the selected Proposer to answer questions about the data within the files to successfully complete the data conversion.  This approximate size of the data to be migrated is 480,000 accounts for MDWASD

### 2.11.10   System Testing and Acceptance

The selected Proposer, in conjunction with County staff, shall be responsible for testing the Solution and ensuring proper functionality, prior to Go-Live. The resultant contract will include a payment milestone schedule with a Final Acceptance milestone dependent in part on the completion of the testing phase, as defined below, and addressing of defects identified during testing. A decision to approve Final Acceptance without meeting the criteria for addressing defects identified below will be at the sole discretion of the County.

Testing activities include but are not limited to:
- Test plan development by Proposer, for approval by County staff.
- Creating test scripts for:
  - User Acceptance Testing, by County staff with assistance from Proposer.
  - Solution Testing, created by Proposer.
- Proposer to perform:
  - Solution testing.
  - Integration testing, with assistance from County staff as needed.
  - Data Setup and Configuration testing.
- Infrastructure validation and Solution load testing carried out by Proposer with assistance from County staff, including:
  - Performance testing.
  - Hardware and network capacity testing.
  - Application Load testing.
  - Infrastructure redundancy and failover processes testing.
  - Disaster Recovery environment and processes.
- Security testing, completed by ITD Security team, with assistance from Proposer.
- User Acceptance Testing, to be completed by County staff.

It is the expectation and requirement of the County that the Proposer shall complete testing prior to County User Acceptance Testing ("UAT"). The Proposer shall provide all Documentation related to Solution testing for County verification, validation and approval prior to UAT. All test results by Proposer shall be documented and shared with the County, both at individual test case and test summary levels.

The Proposer shall provision tools to simulate or generate real application transaction load as part of the application load testing. All associated costs for load testing shall be factored into the proposed implementation timeline and price proposal.

The County expects assistance as necessary throughout the testing process from the Proposer in the form of advice, product information, and guidance in relation to the proposed Solution in order to ensure that it is able to effectively and efficiently document and perform its required testing activities.

Defects identified during implementation will be categorized as per the criteria described in Section 2.11.13.2 Post-Implementation On-Site Support.

Any defects identified through testing will be addressed as below:
- Correction of all Severity 1 and Severity 2.
- Addressing of Severity 3 issues either by correction prior to Go-Live, or by a mutually agreed upon future date.
- Addressing of Severity 4 issues through regularly scheduled future maintenance releases of the Solution, within one year of Go-Live.

- Prior to Final Acceptance, the County requires a period of thirty (30) calendar days of continuous operation without a Severity 1 or Severity 2 defect as defined in Section 2.12 Support Services. The occurrence of a Severity 1 or Severity 2 defect within the 30 calendar days will result in failure to achieve Final Acceptance and County payment of the associated payment milestone.

### 2.11.11 Maintenance Services

The County requires Maintenance for Solution described below.

#### 2.11.11.1        Software Maintenance Services

The selected Proposer shall provide maintenance services to the County throughout the term of the resultant contract, including any optional extension or renewal periods.

At a minimum, maintenance services should include updates and upgrades to the Solution generally made available to other customers. Such updates and upgrades shall include correction of substantial defects, fixes of minor bugs, fixes due to conflicts with mandatory operating system security patches, enhancements to Solution functionality, and upgrades to new version releases. Updates and upgrades must maintain compatibility with all customizations and interfaces. The maintenance services may include the option of installation of new releases by the selected Proposer. Additionally, updates to the Solution must be provided as determined by legally mandated requirements, such as amendments to local, state or federal laws.   Any Solution downtime associated with maintenance services must be conducted during non-business, off-peak times and requires preapproval of the County.

Maintenance of other non-production environments, such as the test environment shall be included as part of the maintenance services provided.

All maintenance services as outlined below shall be provided for the Solution in its entirety, including any modifications or customizations, including interfaces, to the Solution:

1. All software must be of the most recent release and all software upgrades issued by the selected Proposer must be available to the County at no additional charge.

2. Access to the Solution should be designed in such a manner where an upgrade or change to the Solution does not require staff to go to a computer to manually update. If installation is needed on an individual workstation, that software should be self-managed and be able to be updated on-demand without interaction from Miami-Dade County IT staff.

3. Periodic updates of the Solution may incorporate:
   a) corrections of any substantial defects.
   b) fixes of any minor bugs.
   c) fixes due to any conflicts with mandatory operating Solution security patches, to be resolved as Severity Level 1.
   d) enhancements made to any Solution components that the County has licensed.

#### 2.11.11.2        Equipment/Hardware Maintenance Services

The Equipment/Hardware maintenance services shall include all break-fix, parts and labor required for continued uninterrupted operation of the Solution in accordance with the standards established in Section 2.11.7.  The County is seeking maintenance services which include all communication equipment and parts.

**2.11.12  Technical Support Services**

The County requires Technical Support Services for the proposed Solution as described below:

**2.11.12.1      Support Services**

The selected Proposer shall be responsible for providing technical support services to ensure optimal performance of the proposed Solution, including all components, throughout the term of the resultant contract, including any optional renewal periods.

The selected Proposer must have technical support services available to authorized County staff in the form of unlimited email and telephone support 24 hours per day, seven days per week, including holidays. In conjunction with live telephone support the County prefers the Proposer to provide an electronic helpdesk ticketing system to allow authorized County staff to submit incidents and service requests electronically.

The selected Proposer shall demonstrate the ability to do the following:
- Log all calls received.
- Track all calls throughout the process until the solution or information is relayed back to the customer.
- Give every call a unique number for tracking purposes, preferably a "ticket #".
- Produce a report of all outstanding County tickets in a given time period.
- Produce a report of all closed tickets in a given time period.
- Search by any field.
- Track all work requests, complaints, and informative calls.
- Support copy and paste with other Windows applications.
- Assign authorized County staff to access the issue tracking system.
- Track resolution time to severity level.
- Services the hardware installed for the Solution Corrections of substantial defects in the Solution so that the Solution will operate according to specifications to be resolved as Severity Level 1 as defined below.

The County desires severity definitions and response times for Support Services as listed below:

| Severity | Definition | Response Time | Resolution Time | Status Frequency Update |
|---|---|---|---|---|
| 1=Critical | A critical component of the Solution, whether equipment/hardware or software, is in a non-responsive state and affects users' productivity or operations.<br><br>A high impact problem which affects all users. | 15 minutes | One (1) Hour | 15 minutes |
| 2=Urgent | Any component failure or loss of functionality not covered in Severity 1, which is hindering operations, such as, but not limited to: excessively slow response time (exceeds maximum defined response times); functionality degradation; error messages; backup problems; or issues affecting the use of a module or the data. | One (1) Hour | Four (4)<br><br>Hours | One (1) Hour |
| 3=Important | Lesser issues, questions, or items that minimally impact the work flow or require a work around. | 4 hours | Twenty-Four (24) Hours | Four (4) Hours |
| 4=Minor | Issues, questions, or items that don't impact the work flow.<br><br>Issues that can easily be scheduled such as an upgrade or patch. | 8 hours | Seventy-two (72) hours for an acceptable work around until final resolution | Weekly |

## 2.11.12.2    Post-Implementation On-Site Support

In order to ensure a smooth transition and minimize complications, the County seeks post implementation support on-site after Go-Live for a period, at minimum, of fourteen (14) calendar days. Post-implementation support shall be available for affected users throughout a phased roll-out approach to ensure that each functional area and location are successfully transitioned to the proposed Solution. Proposers should take into consideration that during this post implementation period support will be required at multiple sites.

## 2.12    Performance Credits

In the event that selected Proposer is unable to meet the target times for response or frequency of updates for support incidents as mutually agreed to by the parties in the resultant Contract, the County may assess performance credits in the form of credit to be used by the County for the acquisition of additional products or services available from the selected Proposer or monetary deductions from the next available invoice. The County anticipates a credit amount of $3,000 per day for Severity Level 1 issues and $2,500 per day for Severity Level 2 issues. Additionally, should the selected Proposer fail to meet the annual uptime requirements specified in Section 2.11.7, Item 2, the County anticipates a credit amount of $3,000 per additional hour of downtime. The parties acknowledge and agree that the amount/value of such performance credits does not account for the full business damages experienced by the County as a result of an unresolved support Incident and shall not be construed to be an assessment of the value of damages.

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### 3.0 RESPONSE REQUIREMENTS

### 3.1 Submittal Requirements

In response to this Solicitation, Proposer should **complete and return the entire Proposal Submission Package**. Proposers should carefully follow the format and instructions outlined therein. All documents and information must be fully completed and executed as required and submitted in the manner described. The proposal shall be written in sufficient detail to permit the County to conduct a meaningful evaluation of the proposal. However, overly elaborate proposals are not requested or desired.

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### 4.0 EVALUATION PROCESS

### 4.1 Review of Proposals for Responsiveness

Each proposal will be reviewed to determine if the proposal is responsive to the submission requirements outlined in this Solicitation. A responsive proposal is one which follows the requirements of this Solicitation, includes all documentation, is submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the proposal being deemed non-responsive.

### 4.2 Evaluation Criteria

Proposals will be evaluated by a Competitive Selection Committee which will evaluate and rank proposals on criteria listed below. The Competitive Selection Committee will be comprised of appropriate County personnel and members of the community, as deemed necessary, with the appropriate experience and/or knowledge, striving to ensure that the Competitive Selection Committee is balanced with regard to both ethnicity and gender. The criteria are itemized with their respective weights for a maximum total of <u>one thousand</u> (100) points per Competitive Selection Committee member.

| Technical Criteria | Points Per Member |
|---|---|
| Criteria 1: Components & Functionality: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 10 |
| Criteria 2: Experience, Qualifications, & key Personnel: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 15 |
| Criteria 3: Approach and Methodology: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 10 |
| Criteria 4: Water Meters & Interoperability: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 15 |
| Criteria 5: Endpoints: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 10 |
| Criteria 6: AMI Network / NaaS / SaaS: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 15 |
| Criteria 7: Installation & Meter Box Covers: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 15 |
| Criteria 8: Third-Party Integrations / Warranties / Training: Evaluation of this criteria shall be based upon Proposer's responses to Questions No. X through X in the Proposer Information Section. | 10 |
| **Price Criteria** | |
| Proposed price will be evaluated based on the Solution and associated services proposed and overall best valued to the County based upon the Proposer's response to all sections of Form 1. | 20 |

**4.3     Oral Presentations**

Upon evaluation of the technical criteria indicated above, rating and ranking, the Competitive Selection Committee may choose to conduct an oral presentation with the Proposer(s) which the Competitive Selection Committee deems to warrant further consideration based on, among other considerations, scores in clusters and/or maintaining competition.   (See Affidavit – "Lobbyist Registration for Oral Presentation" regarding registering speakers in the proposal for oral presentations.)   Such oral presentation may include product demonstrations, including Solution compatibility with proximity cards.  In the event that such demonstrations are requested, the County will provide Proposer(s) with sample proximity cards to demonstrate ability to integrate with County ID cards as described in Section 2.5.7.   Upon completion of the oral presentation(s), the Competitive Selection Committee will re-evaluate, re-rate and re-rank the proposals remaining in consideration based upon the written documents combined with the oral presentation.

**4.4     Selection Factor**

This Solicitation includes a selection factor for Miami-Dade County Certified Small Business Enterprises (SBE's) as follows.  A SBE/Micro Business Enterprise is entitled to receive an additional ten percent (10%) of the total technical evaluation points on the technical portion of such Proposer's proposal. An SBE/Micro Business Enterprise must be certified by Small Business Development for the type of goods and/or services the Proposer provides in accordance with the applicable Commodity Code(s) for this Solicitation. For certification information contact Small Business Development at (305) 375-2378 or http://www.miamidade.gov/smallbusiness/.

The SBE/Micro Business Enterprise must be certified by proposal submission deadline, at contract award, and for the duration of the contract to remain eligible for the preference.  Firms that graduate from the SBE Program during the contract term may remain on the contract.

**4.5     Local Certified Veteran Business Enterprise Preference**

This Solicitation includes a preference for Miami-Dade County Local Certified Veteran Business Enterprises in accordance with Section 2-8.5.1 of the Code of Miami-Dade County.  "Local Certified Veteran Business Enterprise" or "VBE" is a firm that is (a) a local business pursuant to Section 2-8.5 of the Code of Miami-Dade County and (b) prior to proposal or bid submittal is certified by the State of Florida Department of Management Services as a veteran business enterprise pursuant to Section 295.187 of the Florida Statutes. A VBE that submits a proposal in response to this solicitation is entitled to receive an additional five percent of the evaluation points scored on the technical portion of such vendor's proposal. If a Miami-Dade County Certified Small Business Enterprise (SBE) measure is being applied to this Solicitation, a VBE which also qualifies for the SBE measure shall not receive the veteran's preference provided in this section and shall be limited to the applicable SBE preference. At the time of proposal submission, the firm must affirm in writing its compliance with the certification requirements of Section 295.187 of the Florida Statutes and submit this affirmation and a copy of the actual certification along with the Proposal Submittal Form.

**4.6     Price Evaluation**

The price proposal will be evaluated subjectively in combination with the technical proposal, including an evaluation of how well it matches Proposer's understanding of the County's needs described in this Solicitation, the Proposer's assumptions, and the value of the proposed services.  The pricing evaluation is used as part of the evaluation process to determine the highest ranked Proposer.  The County reserves the right to negotiate the final terms, conditions and pricing of the contract as may be in the best interest of the County.

**4.7     Local Preference**

The evaluation of competitive solicitations is subject to Section 2-8.5 of the Miami-Dade County Code of Miami-Dade County, which, except where contrary to federal or state law, or any other funding source requirements, provides that preference be given to local businesses.    If, following the completion of final rankings by the Competitive Selection Committee a non-local Proposer is the highest ranked responsive and responsible Proposer, and the ranking of a responsive and responsible local Proposer is within 5% of the ranking obtained by said non-local Proposer, then the Competitive Selection Committee will recommend that a contract be negotiated with said local Proposer.

## 4.8    Negotiations

The Competitive Selection Committee will evaluate, score and rank proposals, and submit the results of the evaluation to the County Mayor or designee with its recommendation.  The County Mayor or designee will determine with which Proposer(s) the County shall negotiate, if any, taking into consideration the Local Preference Section above.  The County Mayor or designee, at their sole discretion, may direct negotiations with the highest ranked Proposer, negotiations with multiple Proposers, and/or may request better offers.  In any event the County engages in negotiations with a single or multiple Proposers and/or requests better offers, the discussions may include price and conditions attendant to price.

Notwithstanding the foregoing, if the County and said Proposer(s) cannot reach agreement on a contract, the County reserves the right to terminate negotiations and may, at the County Mayor's or designee's discretion, begin negotiations with the next highest ranked Proposer(s).  This process may continue until a contract acceptable to the County has been executed or all proposals are rejected.  No Proposer shall have any rights against the County arising from such negotiations or termination thereof.

Any Proposer recommended for negotiations shall complete a Collusion Affidavit, in accordance with Section 2-8.1.1 of the Code of Miami-Dade County.  (If a Proposer fails to submit the required Collusion Affidavit, said Proposer shall be ineligible for award.)

Any Proposer recommended for negotiations may be required to provide to the County:

a)    Its most recent certified business financial statements as of a date not earlier than the end of the Proposer's preceding official tax accounting period, together with a statement in writing, signed by a duly authorized representative, stating that the present financial condition is materially the same as that shown on the balance sheet and income statement submitted, or with an explanation for a material change in the financial condition.  A copy of the most recent business income tax return will be accepted if certified financial statements are unavailable.

b)    Information concerning any prior or pending litigation, either civil or criminal, involving a governmental agency or which may affect the performance of the services to be rendered herein, in which the Proposer, any of its employees or subcontractors is or has been involved within the last three years.

## 4.9    Contract Award

Any proposed contract, resulting from this Solicitation, will be submitted to the County Mayor or designee.  All Proposers will be notified in writing of the decision of the County Mayor or designee with respect to contract award.  The Contract award, if any, shall be made to the Proposer whose proposal shall be deemed by the County to be in the best interest of the County.  Notwithstanding the rights of protest listed below, the County's decision of whether to make the award and to which Proposer shall be final.

## 4.10    Rights of Protest

A recommendation for contract award or rejection of all proposals may be protested by a Proposer in accordance with the procedures contained in Sections 2-8.3 and 2-8.4 of the Code of Miami-Dade County, as amended, and as established in Implementing Order No. 3-21.

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### 5.0 TERMS AND CONDITIONS

The County's anticipated form of agreement is attached as an appendix.  Proposer should review the appendix in its entirety.

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### 6.0 ATTACHMENTS

Appendix A – MDWASD Service Area
Appendix B – Information Technology Department's Technology Model
Appendix C – Cloud Services Usage Policy
Appendix E – Draft Form of Agreement

Proposer Submission Package, Including:
- Web Forms,* Including: Proposal Submittal Form, Subcontracting Form, Lobbyist Registration Form, and Contractor Due Diligence Affidavit

- Proposer Information Section, including Attachment A (Interface Matrix) and Attachment B (Information Technology Security Matrix)**
- Form 1 – Price Proposal Schedule**

*Note 1 – The Web Forms are provided via BidSync for electronic submission.
**Note 2 – The Proposer Information Section, Form 1, Attachment A, and Attachment B have been posted to BidSync in the form of fillable Microsoft Word documents.

## Appendix A
## MDWASD Service Area Map
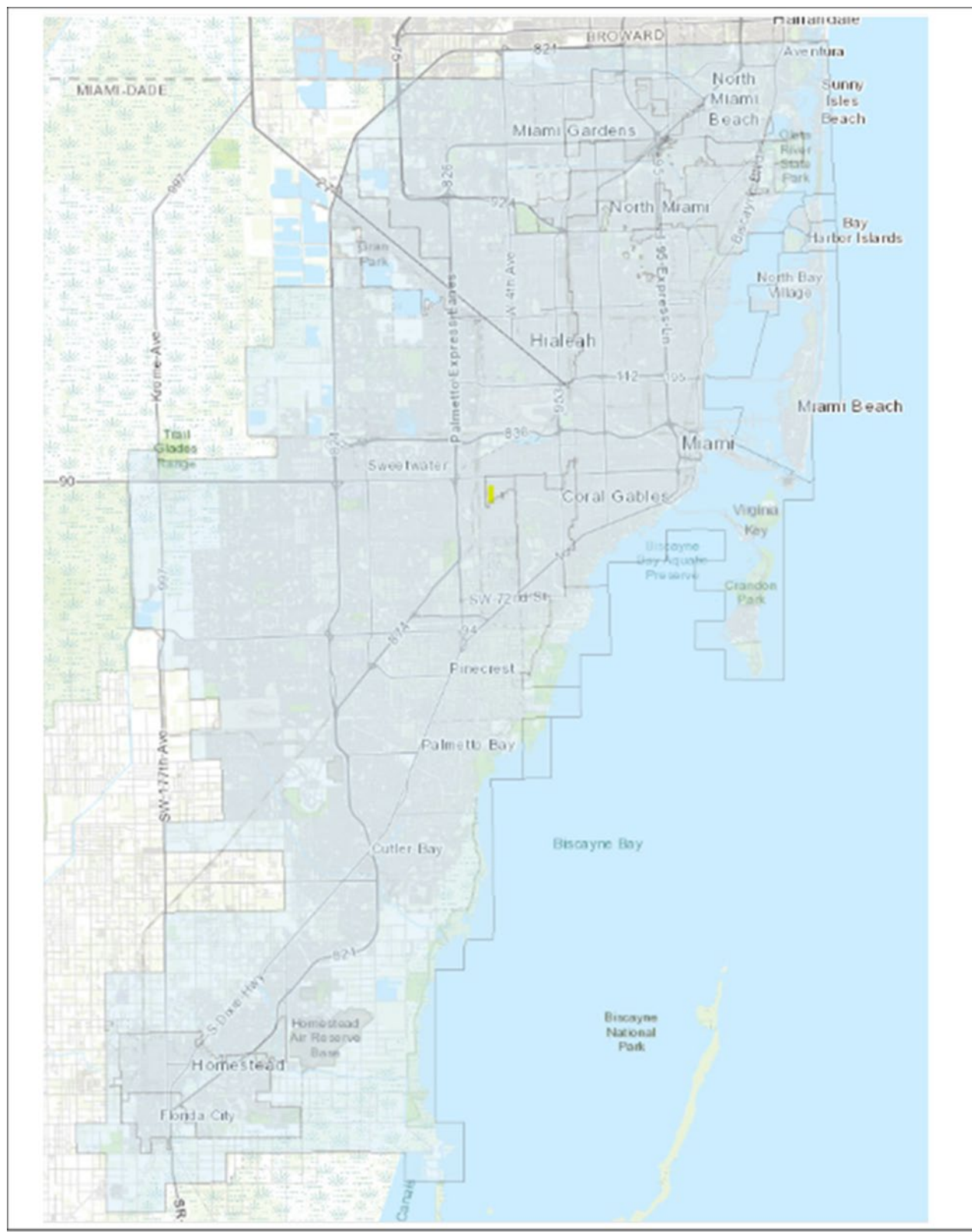
## Appendix B

## Information Technology Department's Technology Model

**Miami-Dade County**
**Information Technology Department**
**Summarized Currently Implemented Technology**

| **Distributed Operating Systems** | <ul><li>Windows 2008 Enterprise Edition</li><li>AIX 6.1 or Higher</li><li>Ret Hat Linux 6 Or Greater</li><li>VMware</li><li>OSX</li></ul> |
|---|---|
| **Mainframe OS and OLTP** | <ul><li>Z/OS 1.13- upgrading to 2.20 in July 2016</li><li>Z/VM Release 6.3</li><li>Z/Linux Red Hat 6.5 or greater</li><li>CICS V5.1.0</li></ul> |
| **Database** | <ul><li>Oracle Enterprise Edition Release 11.2.0.3 RAC Certified Systems (Enterprise Solution)</li><li>AIX Oracle Non-RAC 11.2.0.2</li><li>MS SQL 2012 and higher Enterprise 64 bit</li><li>Oracle MySQL for WordPress and PHP solutions</li><li>Oracle Exadata</li></ul> |
| **Hardware** | <ul><li>IBM Z Series mainframe (2 IBM 2098-E10/P03) – 7 LPARS – 2 VM partitions virtualizing Z/Linus Servers</li><li>HP model servers with Integrated Lights Out (ILO)</li><li>HP blade server with VIO option</li><li>HP blade servers with CITRIX XenServer for XenApp virtualization</li><li>HP blade servers with CITRIX Xen Server for XenDesktop virtualization Wintel servers with VMWare virtualization software</li><li>HP ProLiant dual core servers</li><li>IBM pSeries servers (model 9119-FHB known as a p795)  and IVR 9131-52A known as p520Workstations - preferred manufacturer (Dell)</li><li>Thin Client Workstations – WYSE C10LE</li><li>Mobile Devices – Blackberries, iPhone, iPad, Android</li></ul> |

| | |
|---|---|
| **Network** | ➢ Fiber channel (BROCADE Fiber switches – Fe1, Fe2, Fe4, Fe40)<br><br>➢ TCPIP Communications Protocol<br><br>➢ Network Switches<br><br>➢ Telephone Switches<br><br>➢ Telephone Equipment<br><br>➢ DSL<br><br>➢ FiCon<br><br>➢ SolarWinds<br><br>➢ EdgeSight monitoring<br><br>➢ Remote locations connected to central County location with varying speeds from ADSL 256kbps to 1gbps for core sites<br><br>➢ Microsoft DNS<br><br>➢ Citrix SSL VPN<br><br>➢ Citrix Access Gateway |
| **Storage** | ➢ Mainframe Storage – IBM DS8870<br><br>➢ Tier 1 SAN storage – IBM DS 8100, DS8300<br><br>➢ Tier 2 SAN Storage – HP HSV SANS with Fiber Channel<br><br>➢ Tier 3 SAN Storage – HP HSV SANS with FATA high density low performance disk<br><br>➢ Mainframe Tape Storage – SUN/STK SL8500 – 9940B and T10000D Tape Drives<br><br>➢ Tier 1 Tape Storage – SUN/STK SL8500 – 9940B Tape Drives<br><br>➢ Tier 2 Tape Storage – SUN/STK SL500 – LT02, LT04 |
| **Storage Management** | ➢ Veritas NetBackup 6.0 for all distributed systems backups<br><br>➢ Veritas Cluster Series<br><br>➢ Veritas Global Clusters<br><br>➢ Veritas Global Replicate<br><br>➢ Veritas Volume Manager<br><br>➢ IBM PowerHA SystemMirror for AIX V7 or greater<br><br>➢ IBM Global Parallel Filesystem GPFS V3.5 or Greater<br><br>➢ IBM-HSM for mainframe backup and recovery |

| | |
|---|---|
| | ➢ Innovation FDR for mainframe backup and recovery |
| | ➢ CA/Disk for mainframe backup and recovery |
| **Security & Identity Management** | ➢ RACF (mainframe security) |
| | ➢ Trend Anti-Virus for servers |
| | ➢ Rational App Scan |
| | ➢ Active Directory |
| **Distributed Application Development Stack** | ➢ ASP.NET |
| | ➢ Visual Studio 2008 (VB & C#) |
| | ➢ Rational Application Developer |
| | ➢ .Net Framework 1.1, 2.0, 3.0, & 3.5 |
| | ➢ Bootstrap |
| | ➢ Materialize |
| | ➢ Ionic |
| | ➢ J2EE JDK 1.4 |
| | ➢ Objective-C for iOS SDK |
| | ➢ PHP5 |
| | ➢ HTML5/CSS3 |
| | ➢ IntelliJ IDEA Ultimte (itellij/webstorm) |
| | ➢ Java 8 |
| | ➢ JavaScript |
| | ➢ Python |
| | ➢ Node.js |
| | ➢ Proto.io |
| | ➢ BrowserStack |
| | ➢ iStock Photos |
| | ➢ Adobe PhoneGap |
| | ➢ AWS Servies |
| | ➢ Angular |
| | ➢ Apiary.io |
| | ➢ Adobe Creative Suite |

| | |
|---|---|
| | ➢ Jenkins |
| | ➢ Github |
| | ➢ Visual Studio Team Services (VSTS) |
| | ➢ Pivotal Tracker |
| | ➢ Selenium |
| | ➢ New Relic |
| **Web Platform & Social Media** | ➢ Socrata Open Data |
| | ➢ Opentext Teamsite & Livesite |
| | ➢ Oracle Eloqua |
| **Applications Desktop & Enterprise** | ➢ Modern browser versions current & current-1 for IE, Chrome, and Firefox |
| | ➢ Office 365 Pro Plus |
| | ➢ Citrix (Thin Client Access) |
| **Enterprise Applications** | ➢ PeopleSoft ERP using WebLogic and Tuxedo |
| | ➢ ESRI software products for GIS (ArcGIS for Server, ArcGIS for Desktop, ArcGIS Online, Esri Maps for Office and Esri Maps for IBM Cognos) |
| | ➢ Infor Asset Management |
| | ➢ Microsoft Exchange 2010 |
| | ➢ Documentum Electronic Document Management System |
| | ➢ EnergyCAP Utility Billing |
| | ➢ AssetWorks Fleet Maintenance |
| **Middleware** | ➢ IBM MQ Message Broker and Workflow |
| | ➢ WebSphere Application Server 6.1 |
| | ➢ IIS 7.5 |
| | ➢ Microsoft SharePoint Online (Office 365) |
| | ➢ WebSphere Portal Server |
| | ➢ Shadow z/Services for CICS |
| **Systems and Asset Management** | ➢ HP Insight Manager/SIM (for HP hardware management) |
| | ➢ HP Continuous Access Replicator |
| | ➢ MS SCOM, MS SCCM |
| | ➢ Enterprise Network & System Management |

| | |
|---|---|
| | o  IBM Tivoli Monitoring |
| | o  IBM Tivoli Network Manager |
| | o  IBM Tivoli Netcool Omnibus |
| | o  IBM Tivoli Composite Application Manager for Transactions |
| | o  IBM Tivoli Composite Application Manager for SOA |
| | o  IBM Tivoli Composite Application Manager for WAS |
| | o  Tivoli Application Dependency Discovery Manager |
| | o  IBM Tivoli Change and Configuration Management Database (Maximo) |
| | ➢  Scheduling Software Tivoli Workload Scheduler (OPC) – all platforms |
| **Data and Information Management** | ➢  SQL Reporting Services |
| | ➢  IBM Content Manager OnDemand Online Reporting |
| | ➢  CA/Dispatch Online Report bundling/printing/viewing |
| | ➢  IBM Cognos BI 10.x on Z/Linux for Business Analytics |
| | ➢  MetaManager |
| | ➢  Informatica |

**Miami-Dade County**
**Information Technology Department**
**Technology Model – Database Systems**

**Background:**

ITD provides Database services for applications on five distinct DBMS platforms, of which only 2 are approved for new system development or implementation of new vendor packages.

- The CA-IDMS mainframe based DBMS running under MVS is available only for maintenance and minor enhancements of existing legacy applications.

- The IBM DB2 mainframe based system is a turnkey database used exclusively for On-Demand report management on the mainframe and further development is not allowed.

- The IBM UDB distributed database on the AIX platform is used exclusively as a turnkey DBMS in direct support of specific IBM products that do not support our standard new systems RDBMS platforms. No development is allowed on this RDBMS platform.

- For new system development or implementation of vendor packages the two DBMS platforms are MSSQL and Oracle. An architectural review would be needed to determine the best DBMS platform for any given application. Factors used to determine the best DBMS platform include, but are not limited to, number of users, data type, total database size, transaction counts, DR, COOP, HA and multi-site co-processing requirements, integration(s) with other systems, internet vs. intranet usage, mainframe legacy interface, and reusability of existing enterprise components.

  o The MSSQL DBMS runs on the Windows 64 bit platform.

  o The Oracle RAC RDBMS system on the Red Hat Linux; non-RAC Oracle DBMS runs on AIX platform. Application databases that are CPU and/or I/O intensive are best suited for the AIX Oracle platform.

  o Oracle Data Warehouse runs in a dedicated Exadata environment.

**ITD Infrastructure
Current Technology Model
Database Systems**

**Current Release Levels by Product:**

IDMS            IDMS Release 18.0 running moving to 19.0 on IBM ZOS release 1.11 moving to 1.13

DB2             DB2 Release 10 running on IBM ZOS release 1.11 moving to 1.13

UDB             UDB Release 9 to 10 running on AIX release 5.3 moving to 6.0

MSSQL           Enterprise 64 bit running on Windows 64 bit HP Servers

Oracle          Oracle Enterprise Edition Release 11.2.0.3 RAC Certified Systems running on Linux Red Hat release AS 6 or higher on HP servers or AIX release 6.1 Oracle Edition Release 11.2.0.4– Partitioning is not available.

**Current Infrastructure Configuration:**

For purposes of this document the IDMS DB2 and UDB infrastructure configurations will not be described since new development or new systems installations are not authorized on these platforms.

MSSQL

The current County-wide shared platform consists of:

- The Production and Test environments consist of clustered servers each consisting of 2 HP servers with 2 multi-core processors running Windows 64 bit and MSSQL 64 bit.

- Planned implementation of a mini-warehouse cluster consisting of 2 HP servers with 2 dual core processors running Windows 32 bit and MSSQL 32 bit.  This platform will also support legacy link services between MSSQL to Oracle.  Due to the inherent stability issues of this type of link service, current legacy systems requiring this service are located in this infrastructure with lower than 95% availability expectations.

- Planned implementation of a small Disaster Recovery Stand-by cluster to be located at the ICFB consisting of 2 HP servers with multi-core processors running Windows 64 bit and MSSQL 64 bit.

**Current Infrastructure Configuration (cont.):**

Oracle

The current County-wide shared platform consists of:

- Multiple Production Two-Node Oracle RACs consisting of multiple HP 2 dual core servers running Red Hat Linux for DBMS systems that fully conform to County standards of operation.

- One Test Two-Node Oracle RAC consisting of multiple HP 2 dual core servers running Red Hat Linux.

- One planned Production Standby and Co-processing Multi-Node RAC consisting of multiple HP 2 dual core servers running Red Hat Linux located at ICFB for DBMS systems that require either standby Disaster Recovery operations or require full 24x7 co-processing systems.

- Two Production and Two Test AIX LPARs with mutual failover for DBMS systems that fully conform to County standards of operation.

Within the County-wide Oracle platform customers may select service levels as follows:
- Standard availability 7 a.m. to 7 p.m. Monday to Friday – Non Mirrored Storage

- Standard availability 7 a.m. to 7 p.m. Monday to Friday – Mirrored Storage

- 24 x 7 availability - Non Mirrored Storage

- 24 x 7 availability – Mirrored Storage

- 24 x 7 availability – Mirrored Storage – with offsite standby databases

- 24 x 7 availability – Mirrored Storage – with two site co-processing databases

The County also maintains application specific infrastructures in the AIX and SUN Solaris environment for specialized use systems such as GIS, EDMS, ERP and the like.

**ITD Infrastructure**
**Current Technology Model**
**Database Systems**

**Restrictions of Use:**

The following general restrictions of use apply to all platforms.

- Access to Production is locked down for access by pre-programmed application sets only.

- Application systems or users are not authorized the use of system administrator or database owner privileges in the production or test environments. Database or Schema Owner privileges are allowed in the test environments when requested.

- Users connecting to the database through the applications must do so with a unique userid known to the DBMS system. The application must encrypt the password in such a way that the particular user id cannot be used for logon through some other third party tool using an ODBC connection such as Toad or MS Access.

- Applications requiring data auditing must include auditing within the application.

- Databases or portions thereof may not be transported offsite or copied to test systems without the expressed authorization of the ITD Security Administrator.

- The database infrastructure is dedicated exclusively to managing requests for data contained in the database. Application program sets are not authorized execution in DBMS specific infrastructure. Limited availability of an application specific FTP area will be considered when no other option is available.

- All systems are subject to review and possible denial of service of high resource using SQL statements that impact other users or applications. The database support staff is available to assist application developers in pinpointing problem areas and suggesting possible improvements or design changes to alleviate these high resource SQL queries.

- Any application whether vendor supplied or developed by County staff must provide certification of use on new vendor releases or patches no more than 90 days after the DBMS provider announced General Availability Date. Any DBMS vendor security patch must be immediately certified for use by the application and will be applied as soon as is feasible upon DBMS vendor release.

- The County will not provide support to any database that is not on the current supported release level of the DBMS vendor.

- Storage for databases are provided exclusively through SANs (Storage Array Systems) provided by both HP and IBM devices.

- Images and text documents are not authorized for storage in a database.

- Changes to Production must follow currently published ITD Change Management procedures.

- For the convenience of our customers and for planning purposes a service lead time table is provided for the typical requests for service at http://database

- See Database Security Policies for further usage restrictions.

**Restrictions of Use (cont.):**

MSSQL

- Previously known as DTS processing now under the name of SSIS (SQL Server Integrated Services) is not a clustered application. Therefore availability of this service is not guaranteed.

- Mirrored storage is not provided in the MSSQL infrastructure.

- Applications requiring data encryption must include encryption modules within the application.

- Link services between SQL to Oracle are not provided – (however Oracle to SQL link services are provided).

- SQL Report services are not supported as an operational component within the County-wide SQL database infrastructure.

Oracle

- All Systems targeted for the RAC must be RAC Compliant at the current release level supported by the County infrastructure.

- Only Oracle features available from the Oracle Enterprise Edition are available for use. The Oracle Key Features Summary (below) outlines those features that are currently supported.

- Standby and co-processing databases are limited to like infrastructures for the master and standby systems or the co-processing infrastructure.

| Oracle Key Feature Summary | Enterprise Edition |
|---|---|
| Windows | Not Supported |
| Linux | Supported |
| Unix AIX | Supported |
| 64 Bit Support | Supported |
| Total Recall | $Option |
| Active Data Guard | $Option |
| Fail Safe | Supported |
| Flashback Query | Not supported |
| Flashback Table, Database and Transaction Query | Not supported |
| Oracle Secure Backup | Not supported |
| Server Managed Backup and Recovery | Supported |
| Real Application Clusters | Supported |
| Integrated Clusterware | Not supported |
| Automatic Workload Management | Not supported |
| Java, PL/SQL Native Compilation | Supported |
| Oracle Database Vault | $Option |
| Oracle Audit Vault | Not supported |
| Oracle Advanced Security | $Option |
| Oracle Label Security | $Option |
| Secure Application Roles | Supported |
| Virtual Private Database | Supported |
| Fine-Grained Auditing | Supported |

| | |
|---|---|
| Proxy Authentication | Supported |
| Data Encryption Toolkit | Supported |
| Oracle SQL Developer | Supported |
| Application Express | Not supported |
| Java Support | Supported |
| Comprehensive XML Support | Not supported |
| PL/SQL and Java Server Pages | Supported |
| Comprehensive Microsoft .Net Support, OLE DB, ODBC | Supported |
| Real Application Testing | $Option |
| Enterprise Manager | Supported |
| Automatic Memory Management | Supported |
| Automatic Storage Management | Supported |
| Automatic Undo Management | Supported |
| Advanced Compression | $Option |
| OLAP | $Option |
| Partitioning | $Option |
| Data Mining | $Option |
| Transportable Tablespaces, Including Cross-Platform | Not supported |
| Star Query Optimization | Supported |
| Information Lifecycle Management | Not supported |
| Summary Management - Materialized View Query Rewrite | Not supported |
| Oracle Warehouse Builder | $Option |
| Oracle Streams | Supported |
| Advanced Queuing | Supported |
| Workflow | Not supported |
| Distributed Queries/Transactions | Supported |
| XML DB | Not Supported |
| Multimedia | Not supported |
| Text | Not supported |
| Locator | Not supported |
| Spatial | $Option |
| Secure Enterprise Search | Not supported |
| Oracle Content Database | $Option |

* Supported = Currently supported by the County
* Not Supported = Currently not supported by the County - Additional Funding may be required for Support Staff.

* $Option = Currently not supported by the County - Additional Funding for Licenses and Support Staff Required

**Miami-Dade County
Information Technology Department
Technology Model
Geographic Information System (GIS)**

**Background:**

Miami-Dade County has a mature Enterprise GIS utilized by County departments, residents and external agencies.  The county's GIS utilizes ArcGIS products developed by Esri (Environmental Systems Research Institute).  Windows platforms are maintained for the hosting of desktop and web applications, services, and batch jobs.  ArcGIS for Desktop and extensions are made available through Citrix XenApp. Additionally, the County utilizes ArcGIS Online, a cloud service offered by ESRI to deploy simple internet based services.   GIS data is maintained in ArcSDE geodatabases using Oracle with Sun Solaris or SQL Server.  Refer to Appendix A:  GIS Infrastructure Diagram.

Address locator services, GIS web services and map cache services are maintained for general use.  Refer to Appendix C: Miami-Dade County Enterprise GIS Services.

The GIS architecture relies on the geodatabase model to manage geographic data and build relationships between different data types. The County has over 1,000 geographic layers in its GIS Central Data Repository as well as current digital orthophotography and oblique imagery from Pictometry. Refer to Appendix D:  Miami-Dade County GIS Central Data Repository Layers.

GIS data can be downloaded in various formats at no cost at:
http://gisweb.miamidade.gov/GISSelfServices/GeographicData/MDGeographicData.html

Data can also be downloaded, viewed and accessed from the County's GIS Open Data site which contains all the layers available to the public at no charge. This is the link to the site:

http://gis.mdc.opendata.arcgis.com/

**GIS Infrastructure Requirements:**

1. Any ArcGIS for Desktop application should be deployable through Citrix XenApp technology.
2. Any ArcGIS for Desktop editing application should use Miami-Dade County ArcGIS Editing Extension.
3. All addresses must adhere to Miami Dade County – USPS Address Standards (Appendix B).
4. Any GIS layer must be stored in Florida State Plane East Zone NAD83, feet coordinate system.
5. Solution must use Miami-Dade County address locators and Web services for address standardization, geocoding, etc. Refer to Appendix C: Miami-Dade County Enterprise GIS Services.
6. Solution should make use of Miami-Dade County's GIS Web services. Refer to Appendix C:  Miami-Dade County Enterprise GIS Services.
7. Any new or restructured GIS data layer will need to meet Miami-Dade County's GIS data standards.
8. Solution should not require the implementation of its own proprietary GIS components.
9. Solution must not require the implementation of GIS software other than Esri suite of products.
10. Solution must be implemented using Oracle or SQL Server databases for spatial data.
11. If solution requires batch processing, jobs must be scheduled and executed without manual intervention.
12. If Web based, solution must use REST (Representational State Transfer) architecture style.
13. If Web based, solution must be implemented using ArcGIS for Server for the Microsoft .Net Framework.
14. Solution must stay current with Esri Product Life Cycle.
15. Applications to be hosted in Miami-Dade County's GIS infrastructure must adhere to Miami-Dade County GIS Application Hosting Standards as specified in this document.
16. Solution must include ability to be compatible with ESRI ArcGIS On-line technology.

**Miami-Dade County**
**Information Technology Department**
**Hosting Requirements**

**ITD will provide Enterprise Hosting Facilities and Technical Support to the Customer for monitoring and maintaining operations of infrastructure environments to include Application support.**

*Concept of Operations*

- Refer to *Technology Model* document for supported hardware/software components.

- Changes to the Production environment shall be introduced through the change management procedures as described by the section *Change Management Process* in this document.

- The Customer's Test and Staging Environments will be hosted and supported by ITD; notification of downtime will be provided with as much advance notice as possible.

- All user-ids must be unique and created using the Miami-Dade County Central Registration System (CRS).

- Requested modifications in a shared environment may be restricted during prime time given their potential requirement for large system resources to execute. Changes of this nature will be scheduled at a time mutually agreed upon.

- Applications to be deployed to the Websphere Application Server (WAS) environment must be packaged for deployment using the Websphere Deployment Manager. For preparation of applications to be deployed on WebSphere Application Server see:
*http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp?topic=/com.ibm.websphere.express.doc/info/exp/ae/tatk_create_ear.html*

- ITD does not offer any type of remote shell access under any circumstances, including TELNET, Secure Shell Protocol (SSH), Secure File Transfer Protocol (SFTP) or Secure Copy Protocol (SCP).

- ITD is restricted from implementing changes during periods of "moratoriums" such as during countywide Elections and Tax Collection season. These moratorium periods are well established ahead of time and enforced through the *Change Management Process.*

- Vendors and contractors will be made aware of previously established production on-call procedures and will be asked to comply with them.

- Vendors must provide minimum hardware requirements.

- Vendors must provide recommended architecture.

- Vendors must have in-house staff with knowledge on technologies listed on the *Technology Model* document for system set-up and support.

- For vendor owned equipment housed in County facility (co-located) where the vendor supports and maintains the equipment while the County provides electricity, air conditioning and may swap out tape trays for backups:

  - For Intel-based equipment

    - Equipment must be rack mountable.

    - County can provide virtualized servers within the shared services infrastructure based on vendor supplied configurations.

  - For non Intel-based equipment

    - An environmental analysis will need to be conducted before the County can determine if space and the associated environmental requirements are available.

  - GSA (General Services Administration) will provision electricity at an associated cost.

  - All the currently billable costs for network connectivity to Metronet still apply.

  - County does not endorse equipment that requires stand-alone tape backup trays and prefers that the vendor solution can be integrated within the existing Veritas  NetBackup shared infrastructure.

### UNIX/Linux Environment

- Administrator and UNIX/Linux root privileges are limited to ITD Technical Support staff.

- rootvg volume group will not be used to house any databases or any non-operating system data.  Databases, application data and logs will be stored in file systems created outside of rootvg.

- Installation of software that needs to be installed as root needs to be performed by or conjunction with ITD Technical staff.

- Application software is prohibited to run as root.

- O/S rootvg will be mirrored between 2 different physical disks.

- Applications must supply Startup and Shutdown scripts for both normal Startup/Shutdown and Emergency Shutdown.

- All connectivity to servers is accomplished through SSH.  The following protocols are disabled Telnet, rsh and rcp.

### Database Management

- Access to the Production database environment with DBA/SA privileges is limited to the ITD authorized database support.

- It is the responsibility of ITD DBA staff to migrate new database objects to the production database (at times deemed appropriate).

- The application must encrypt the password in such a way that the particular user-id cannot be used for logon through some other third party tool using an Open Database Connectivity (ODBC) connection such as TOAD or Microsoft (MS) Access.

- Databases or portions thereof may not be transported offsite or copied to Test systems without the expressed authorization of the ITD Security Administrator.

### Disaster Recovery

- Unless special provisions are made in advance for the implementation of Disaster Recovery/Business Continuity measures, Customer understands that recovery of IT hardware or data assets from this facility may not be possible.  If recovery at ITD is possible, it will be on a best effort basis.

### Security Requirements

- Operating system security patches are applied as soon as they are made available through an automated process.  Custom patching windows can be created to accommodate availability needs.

- All systems will undergo initial application and host vulnerability scans, prior to being placed into production. High severity applications and systems vulnerability issues identified must be corrected prior to the system being placed into production.  The County utilizes multiple vulnerability scanning products including but not limited to Qualys, WebInspect, Rational AppScan and MetaSploit.

- Regularly scheduled periodic rescans will be performed on the system and any deficiencies or vulnerabilities identified must be immediately remediated.

- Application vulnerability rescans must be requested of all new or updated application code prior to release to production.  All critical vulnerabilities must be remediated before the application code will be authorized to be migrated to the production environment.

### Software Release Levels Supported

- All vendor-supplied software supported by ITD must have an active vendor maintenance agreement and must be kept up to current release levels.  Operating system security patches are applied as soon as they are made available

### Software License Renewal

- ITD will manage all infrastructure licensing and maintenance contracts.  Versions of software which are not supported by the vendors will not be supported by ITD.

### Application Test/Staging Environment

- All systems must have at least a Production and Test environment.

  ➢ A Staging environment is recommended when multiple versions of system software and applications are required.

  ➢ A separate reporting, batch or Staging environment can be established where there is a need and the budget allows it.

- Production and Test server-side software installation and upgrades will be performed by ITD staff and will follow ITD's *Change Management Process*
  - ➢ Maintenance services will include correction of any defect affecting any of the components of the infrastructure. Resolutions of problems may be delivered in the form of a patch, maintenance update, procedural work around or installation of a new release. Some corrections may be required to be implemented immediately. In those instances, the *Change Management Process* may be expedited. Changes or patches dealing with Security vulnerabilities are expedited and must be treated as very high priority.
- Support services for the Test/Staging environments are available through ITD with on-site support between the hours of 8 am and 5 pm Monday through Friday, excluding County Holidays, unless coordinated in advance. The Application Test database environment is available with support from the on call staff from 7 am to 7 pm, Monday through Friday, excluding County Holidays, unless coordinated in advance. The Test databases are restricted environments; schemas passwords are not published. The Staging database is not restricted; schema passwords are published.

**Preventative Maintenance and System Upgrades**

- The lengths of outages for non-routine maintenance are determined by the requirements of the maintenance procedure. Each outage will be planned and discussed at the weekly Hardware/Software Meeting held every Wednesday morning at 9 a.m. in the ITD Command Center Conference Room.

- All requests for software or hardware upgrades will be addressed in the Hardware/Software Meeting and must include a detailed plan.

**Change Management Process**

All requests to modify the Production and Test environments, such as for new Application releases and patches will require a *Change Management Request* form to be submitted using the system of record at the time which includes a description and schedule of the change, outage period, areas impacted, back out plan and on call personnel.

**Security**

- Vendors will be required to:

- Provide the ability for each user to be uniquely identified by ID.
- Provide basic authentication through use of passwords.
- Provide the ability to enforce password expiration.
- Provide the ability to require automatic password expirations when initially assigned or reset.
- Provide ability to configure password parameters such as password lengths, user access to expiration settings and other behaviors, enabling alphanumeric characters, etc.
- Provide the ability to encrypt transmitted data and authentication information over internal and external networks.
- Provide support for Secure Socket Layer (SSL) 128 bit and 256 bit encryption.
- Provide a password database encrypted in storage.
- Provide ability to protect audit logs from unauthorized access.
- Provide ability to log activities performed by specific user ID and IP address and to date-time stamp all activities.
- Provide ability to identify and log all subsequent access points to ensure accountability is maintained throughout session.
- Provide ability to limit concurrent sessions.
- Provide ability to log changes to administrative functions.
- Provide ability to automatically archive audit logs.
- Provide ability to set an unsuccessful access attempt limit and suspend IDs after reaching the unsuccessful access threshold.

- Provide ability to send alerts to administrators for unauthorized access attempts.
- Enable automatic logoff of ID after a defined period of session inactivity, and perform subsequent re-log-on password authentication.
- Provide ability to lock out user or group ID by date or time.
- Provide centralized administration, user authorization, registration and termination.
- Data that is protected through encryption is an individual's Personally Identifiable Information (PII). Items that may be considered PII include, but are not limited to, a person's:

    ➢ Full name (if not common)

    ➢ Social Security Number or National identification number

    ➢ Telephone number

    ➢ Street address

    ➢ E-mail address

    ➢ IP address (in some cases)

    ➢ Vehicle license plate number

    ➢ Driver's license number

    ➢ Face, fingerprints, or handwriting

    ➢ Credit card numbers or credit card account information (billing address, account name, expiration date etc.)

    ➢ Bank Account Routing (RTN) and Account numbers

    ➢ Digital identity

**Geographic Information System (GIS)**

- ArcGIS for Desktop/CITRIX Applications

    ➢ Local application data that requires read/write access must be stored/and accessed from the centralized ITD CITRIX file shares. The application cannot require the end user to write to the servers' hard drive.

    ➢ End user application customizations must be stored in the end users profile under documents and settings.

    ➢ Applications (including ArcGIS for Desktop extensions) must be compatible with 64bit Windows Server operating systems.

    ➢ Source code must be available.

- ArcGIS for Server Web Applications

    ➢ Application must work with current version of ArcGIS for Server running in production servers or a newer planned upgrade version.

    ➢ All applications should access data from ITD ArcSDE servers, and only specific datasets should be stored locally. A process should be implemented if data needs to be refreshed.

    ➢ All errors should be written to a log folder in corresponding website directory created for each GIS application.

➢ If application is found to contain errors that render it unusable or that present erroneous or misrepresented data, the GIS Web administrator will remove it immediately from production until such time as the application is fixed and tested successfully.

➢ Every new Internet application must pass a security review prior to production implementation.

- ArcGIS/ArcSDE Geodatabase Desktop and Web Editing Applications

  ➢ All applications must work with the same version of ArcGIS that the County is using in its enterprise production environment or a newer planned upgrade version.

  ➢ Desktop editing applications should be integrated with Miami-Dade Editing Extension in order to leverage the County's geodatabase versioning mechanism. ITD will provide documentation and required technical support.

  ➢ Desktop editing applications should be deployed through CITRIX technology. If CITRIX is not a viable solution, the user department is responsible for coordinating the installation, maintenance and upgrade of software in users' workstations.

  ➢ Web editing applications should use a designated Read/Write ArcSDE instance for the Web, separate from the one used by desktop applications.

  ➢ The GIS ArcSDE geodatabase being edited by the hosted editing application (desktop or web) should be loaded in a development instance and fully tested prior to its production implementation. ITD GIS staff will be responsible for loading the data from the development instance to production. A copy of the ArcSDE enterprise architecture document will be provided before data loading.

  ➢ Editing Web applications are required to use CAPTCHA, data field validation, and ACL (Access Control List) or an equivalent user permission mechanism.

- Batch Server Jobs

  ➢ Batch jobs must work with current version of ArcGIS desktop/SDE suite running in production servers or a newer planned upgrade version.

  ➢ All batch jobs must comply with the GIS standards for jobs development and ITD job naming conventions and scheduling procedures.

  ➢ Any temporary data should be created in the designated batch job folder within the Scratch Area.

  ➢ All errors should be written to a log folder in corresponding job directory created for each batch processing job.

  ➢ All applications should access data from ITD ArcSDE servers, and only specific datasets should be stored locally. A process should be implemented if data needs to be refreshed.

  ➢ Jobs should be tested thoroughly in the development environment before a change management request is submitted to move job/job related components to the production batch processing servers.

  ➢ All changes to batch processing jobs in the production environment should be requested via change management procedures and should be implemented by the assigned GIS staff.

**Technology Model: Appendix A: GIS Infrastructure Diagram**



All databases have redundancy and are setup on a failover mode. All web servers and application servers are load balanced.
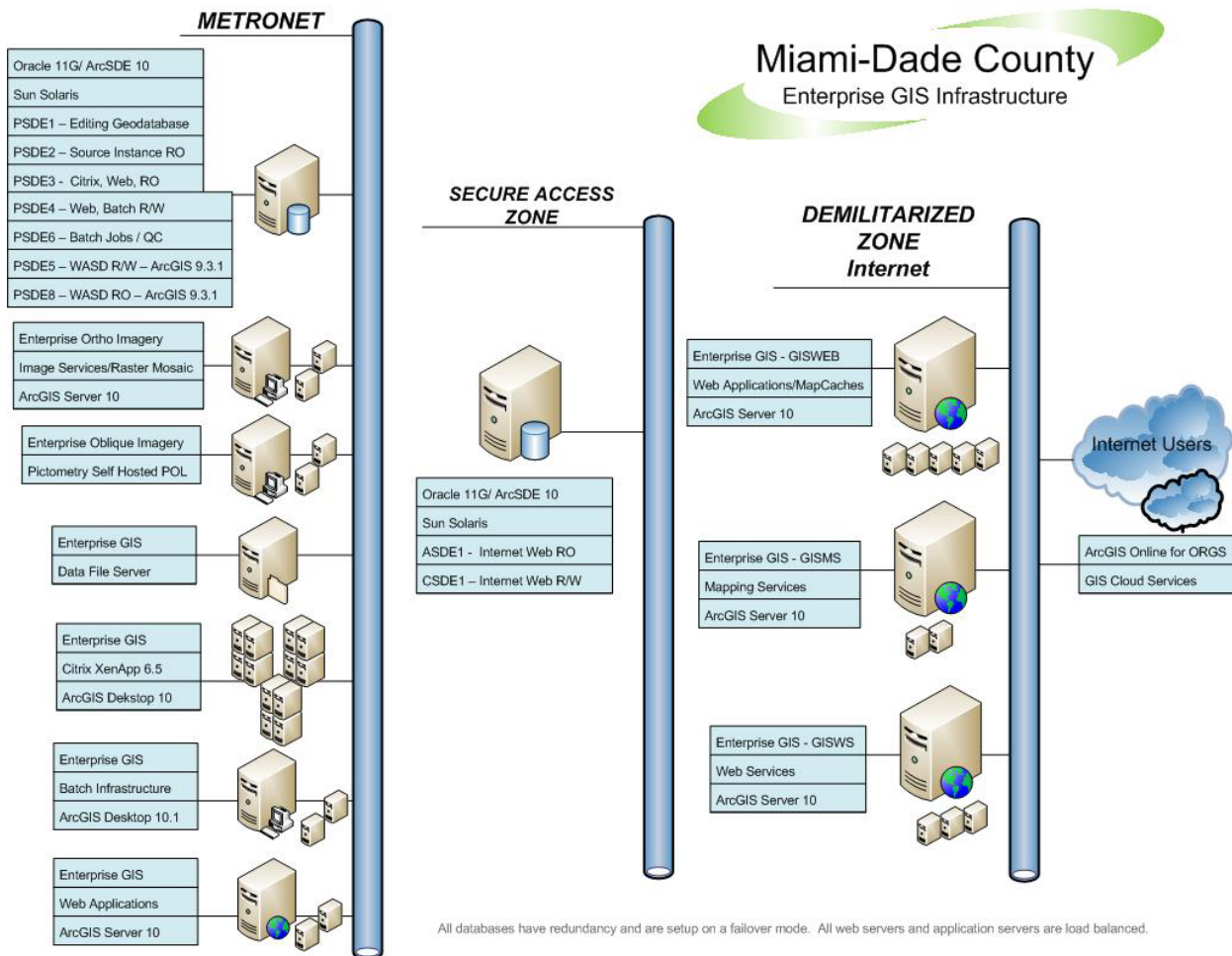
**Technology Model: Appendix B- Miami Dade County – USPS Address Standards**

An address has the following components; house number, pre-direction, street name (number), street type, post-direction, unit designators, city, state and zip code. When formatting addresses into a database the address field should contain the house number, pre-direction, street name (number), street type and post-direction components. All other components should be contained within their own field. Zip code should be separated from the zip+4 designations. For the purposes of this document we will parse the address from left to right. This document describes the address standards for all components of an address.

## 1 House Number

**23456** SW 159th Ct

The first component of an address is the house number. The house number is from one to five numeric digits.

## 2 Pre-directional

345 **NW** 72nd Ave

The second component is the pre-directional. Abbreviate according to the appropriate one or two character abbreviation:

| Direction | Abbv. | Direction | Abbv. |
|-----------|-------|-----------|-------|
| North | N | Northeast | NE |
| South | S | Northwest | NW |
| East | E | Southeast | SE |
| West | W | Southwest | SW |

## 3 Street Name

5680 SW **87th** Ave

The third component is the street name. Numeric street names, should be written using numeric characters and with the appropriate endings, for example, 7th, 72nd, 56th, 3rd.  If a street name contains a direction it should be spelled out.

The following are standardized examples of county, state, and local highways (see Table B for an expanded table).

*Name*
COUNTY ROAD 20
COUNTY HIGHWAY 140
HIGHWAY 50
INTERSTATE 680
ROAD 123
STATE HIGHWAY 335
STATE ROUTE 39
US HIGHWAY 70
TOWNSHIP ROAD 20

## 4 Street Types

43789 NW 77th **Cir**

The fourth component is the street type. The street type of the address should conform to the standard street type abbreviations listed in Table A.

43789 NW 77th **Circle Pl**

If an address has two consecutive words that appear on the street type table (Table A), abbreviate the second of the two words according to the street type table and place it in the street type position of the address. The first of the two words is part of the primary name. Spell it out and add it to the street name.

## 5 Post-directional

13700 Kendale Lakes Cr E

The fifth component is the post-directional. See item 2 pre-directional for standardization.

## 6 Unit Designators

5576 S Miami Ave        Apt 13

The sixth component is the unit designator. Unit designators, such as APARTMENT or SUITE should not be included in the address field of a database. The unit designation should conform to the standard abbreviations listed in Table C. The pound sign (#) should not be used as a secondary unit designator if the correct designation, such as APT or STE, is known.

## 7 City Names

The seventh component is the city name. Spell city names in their entirety.

## 8 State Names

The eight component of an address is the state name. The state name should be abbreviated to the standard two-letter abbreviation as listed in Table D.

## 9 Zip code

The ninth component of an address is the zip code. The zip code or zip+4 must be correctly applied according to the USPS postal service. The primary zip code should be stored separately from the zip +4.

**Table A**

**Street Type Abbreviations**

| Primary Street Type Name | Postal Service Standard Street Type Abbreviation |
|---|---|
| ALLEY | ALY |
| ANNEX | ANX |
| ARCADE | ARC |
| AVENUE | AVE |
| BAYOU | BYU |
| BEACH | BCH |
| BEND | BND |
| BLUFF | BLF |
| BLUFFS | BLFS |
| BOTTOM | BTM |
| BOULEVARD | BLVD |
| BRANCH | BR |
| BRIDGE | BRG |
| BROOK | BRK |
| BROOKS | BRKS |
| BURG | BG |
| BURGS | BGS |
| BYPASS | BYP |
| CAMP | CP |
| CANYON | CYN |
| CAPE | CPE |
| CAUSEWAY | CSWY |
| CENTER | CTR |
| CENTERS | CTRS |
| CIRCLE | CIR |
| CIRCLES | CIRS |
| CLIFF | CLF |
| CLIFFS | CLFS |
| CLUB | CLB |
| COMMON | CMN |
| COMMONS | CMNS |

| | |
|---|---|
| CONCOURSE | CONC |
| CORNER | COR |
| CORNERS | CORS |
| COURSE | CRSE |
| COURT | CT |
| COURTS | CTS |
| COVE | CV |
| COVES | CVS |
| CREEK | CRK |
| CRESCENT | CRES |
| CREST | CRST |
| CROSSING | XING |
| CROSSROAD | XRD |
| CROSSROADS | XRDS |
| CURVE | CURV |
| DALE | DL |
| DAM | DM |
| DIVIDE | DV |
| DRIVE | DR |
| DRIVES | DRS |
| ESTATE | EST |
| ESTATES | ESTS |
| EXPRESSWAY | EXPY |
| EXTENSION | EXT |
| EXTENSIONS | EXTS |
| FALL | FALL |
| FALLS | FL |
| FERRY | FRY |
| FIELD | FLD |
| FIELDS | FLDS |
| FLAT | FLT |
| FLATS | FLTS |
| FORD | FRD |
| FORDS | FRDS |
| FOREST | FRST |
| FORGE | FRG |
| FORGES | FRGS |
| FORK | FRK |
| FORKS | FRKS |
| FORT | FT |
| FREEWAY | FWY |
| GARDEN | GDN |
| GARDENS | GDNS |
| GATEWAY | GTWY |
| GLEN | GLN |
| GLENS | GLNS |
| GREEN | GRN |
| GREENS | GRNS |
| GROVE | GRV |
| GROVES | GRVS |
| HARBOR | HBR |
| HARBORS | HBRS |
| HAVEN | HVN |
| HEIGHTS | HTS |
| HIGHWAY | HWY |
| HILL | HL |
| HILLS | HLS |
| HOLLOW | HOLW |
| INLET | INLT |
| ISLAND | IS |
| ISLANDS | ISS |

| | |
|---|---|
| ISLE | ISLE |
| JUNCTION | JCT |
| JUNCTIONS | JCTS |
| KEY | KY |
| KEYS | KYS |
| KNOLL | KNL |
| KNOLLS | KNLS |
| LAKE | LK |
| LAKES | LKS |
| LAND | LAND |
| LANDING | LNDG |
| LANE | LN |
| LIGHT | LGT |
| LIGHTS | LGTS |
| LOAF | LF |
| LOCK | LCK |
| LOCKS | LCKS |
| LODGE | LDG |
| LOOP | LOOP |
| MALL | MALL |
| MANOR | MNR |
| MANORS | MNRS |
| MEADOW | MDW |
| MEADOWS | MDWS |
| MEWS | MEWS |
| MILL | ML |
| MILLS | MLS |
| MISSION | MSN |
| MOTORWAY | MTWY |
| MOUNT | MT |
| MOUNTAIN | MTN |
| MOUNTAINS | MTNS |
| NECK | NCK |
| ORCHARD | ORCH |
| OVAL | OVAL |
| OVERPASS | OPAS |
| PARK | PARK |
| PARKS | PARK |
| PARKWAY | PKWY |
| PARKWAYS | PKWY |
| PASS | PASS |
| PASSAGE | PSGE |
| PATH | PATH |
| PIKE | PIKE |
| PINE | PNE |
| PINES | PNES |
| PLACE | PL |
| PLAIN | PLN |
| PLAINS | PLNS |
| PLAZA | PLZ |
| POINT | PT |
| POINTS | PTS |
| PORT | PRT |
| PORTS | PRTS |
| PRAIRIE | PR |
| RADIAL | RADL |
| RAMP | RAMP |
| RANCH | RNCH |
| RAPID | RPD |
| RAPIDS | RPDS |
| REST | RST |

| | |
|---|---|
| RIDGE | RDG |
| RIDGES | RDGS |
| RIVER | RIV |
| ROAD | RD |
| ROADS | RDS |
| ROUTE | RTE |
| ROW | ROW |
| RUE | RUE |
| RUN | RUN |
| SHOAL | SHL |
| SHOALS | SHLS |
| SHORE | SHR |
| SHORES | SHRS |
| SKYWAY | SKWY |
| SPRING | SPG |
| SPRINGS | SPGS |
| SPUR | SPUR |
| SPURS | SPUR |
| SQUARE | SQ |
| SQUARES | SQS |
| STATION | STA |
| STRAVENUE | STRA |
| STREAM | STRM |
| STREET | ST |
| STREETS | STS |
| SUMMIT | SMT |
| TERRACE | TER |
| THROUGHWAY | TRWY |
| TRACE | TRCE |
| TRACK | TRAK |
| TRAFFICWAY | TRFY |
| TRAIL | TRL |
| TRAILER | TRLR |
| TUNNEL | TUNL |
| TURNPIKE | TPKE |
| UNDERPASS | UPAS |
| UNION | UN |
| UNIONS | UNS |
| VALLEY | VLY |
| VALLEYS | VLYS |
| VIADUCT | VIA |
| VIEW | VW |
| VIEWS | VWS |
| VILLAGE VILL | VLG |
| VILLAGES | VLGS |
| VILLE | VL |
| VISTA | VIS |
| WALK | WALK |
| WALKS | WALK |
| WALL | WALL |
| WAY | WAY |
| WAYS | WAYS |
| WELL | WL |
| WELLS | WLS |

**Table B**

**Address Standardization - County, State, Local Highways**

The following are examples of county, state, and local highway primary names and the recommended standardized format. These are not the only possible examples.

| *Examples in Use* | *Standard* |
|---|---|
| COUNTY HIGHWAY 140 | COUNTY HIGHWAY 140 |
| COUNTY HWY 60E | COUNTY HIGHWAY 60E |
| CNTY HWY 20 | COUNTY HIGHWAY 20 |
| COUNTY RD 441 | COUNTY ROAD 441 |
| COUNTY ROAD 110 | COUNTY ROAD 110 |
| CR 1185 | COUNTY ROAD 1185 |
| CNTY RD 33 | COUNTY ROAD 33 |
| FL COUNTY RD 150 | FL COUNTY ROAD 150 |
| FLORIDA COUNTY ROAD 555 (excessive characters) | FL COUNTY ROAD 555 |
| EXPRESSWAY 55 | EXPRESSWAY 55 |
| FARM to MARKET 1200 | FM 1200 |
| FM 187 | FM 187 |
| HWY FM 1320 | FM 1320 |
| HIGHWAY 101 | HIGHWAY 101 |
| HIWAY 1080A | HIGHWAY 1080A |
| HWY 64 | HIGHWAY 64 |
| HWY 11 BYPASS | HIGHWAY 11 BYP |
| HWY 66 FRONTAGE ROAD | HIGHWAY 66 FRONTAGE RD |
| HIGHWAY 3 BYP ROAD | HIGHWAY 3 BYPASS RD |
| I10 | INTERSTATE 10 |
| INTERSTATE 40 | INTERSTATE 40 |
| IH280 | INTERSTATE 280 |
| INTERSTATE HWY 680 | INTERSTATE 680 |
| I 55 BYPASS | INTERSTATE 55 BYP |
| I 26 BYP ROAD | INTERSTATE 26 BYPASS RD |
| I 44 FRONTAGE ROAD | INTERSTATE 44 FRONTAGE RD |
| LOOP 410 | LOOP 410 |
| RD 5A | ROAD 5A |
| ROAD 22 | ROAD 22 |
| RT 88 | ROUTE 88 |
| RTE 95 | ROUTE 95 |
| ROUTE 1150EE | ROUTE 1150EE |
| RANCH RD 620 | RANCH ROAD 620 |
| ST HIGHWAY 303 | STATE HIGHWAY 303 |
| STATE HWY 60 | STATE HIGHWAY 60 |
| SR 220 | STATE ROAD 220 |
| ST RD 86 | STATE ROAD 86 |
| STATE ROAD 55 | STATE ROAD 55 |
| SR MM | STATE ROUTE MM |
| ST RT 175 | STATE ROUTE 175 |
| STATE RTE 260 | STATE ROUTE 260 |
| TOWNSHIP RD 20 | TOWNSHIP ROAD 20 |
| TSR 45 | TOWNSHIP ROAD 45 |
| US 41 SW | US HIGHWAY 41 SW |
| US HWY 44 | US HIGHWAY 44 |
| US HIGHWAY 70 | US HIGHWAY 70 |
| FLORIDA 440 | FL HIGHWAY 440 |
| FLORIDA HIGHWAY 189 | FL HIGHWAY 189 |
| FL 1207 | FL HIGHWAY 1207 |
| FL HWY 75 | FL HIGHWAY 75 |
| FL ST HWY 1 | FL STATE HIGHWAY 1 |

| FL STATE HIGHWAY 24 | FL STATE HIGHWAY 24 |
| FLORIDA STATE HIGHWAY 625 | FL STATE HIGHWAY 625 |
| (excessive characters) | |

Note:  When the name of a state is used as a portion of the Primary Street Name, the standard two-letter abbreviation is recommended as depicted in the previous examples. However, when the state name is the complete Primary Street Name, such as OKLAHOMA AVE, then the state name should be spelled out completely.

**Table C**

**Unit Designator Abbreviations**

| *Description* | *Approved Abbreviation* |
|---|---|
| Apartment | APT |
| Basement | BSMT** |
| Blank, unable to determine* | |
| Building | BLDG |
| Department | DEPT |
| Floor | FL |
| Front | FRNT** |
| Hanger | HNGR |
| Key | KEY |
| Lobby | LBBY** |
| Lot | LOT |
| Lower | LOWR** |
| Office | OFC** |
| Penthouse | PH** |
| Pier | PIER |
| Rear | REAR** |
| Room | RM |
| Side | SIDE** |
| Slip | SLIP |
| Space | SPC |
| Stop | STOP |
| Suite | STE |
| Trailer | TRLR |
| Unit | UNIT |
| Upper | UPPR** |

| * | Requires the pound sign (#) to be used on the mailpiece. |
| ** | Does not require a Secondary RANGE to follow. |

**Table D**

**State Abbreviations**

| *State/Possession* | *Abbreviation* |
|---|---|
| Alabama | AL |
| Alaska | AK |
| American Samoa | AS |
| Arizona | AZ |
| Arkansas | AR |
| California | CA |
| Colorado | CO |
| Connecticut | CT |
| Delaware | DE |
| District of Columbia | DC |
| Federated States of Micronesia | FM |

| | |
|---|---|
| Florida | FL |
| Georgia | GA |
| Guam | GU |
| Hawaii | HI |
| Idaho | ID |
| Illinois | IL |
| Indiana | IN |
| Iowa | IA |
| Kansas | KS |
| Kentucky | KY |
| Louisiana | LA |
| Maine | ME |
| Marshall Islands | MH |
| Maryland | MD |
| Massachusetts | MA |
| Michigan | MI |
| Minnesota | MN |
| Mississippi | MS |
| Missouri | MO |
| Montana | MT |
| Nebraska | NE |
| Nevada | NV |
| New Hampshire | NH |
| New Jersey | NJ |
| New Mexico | NM |
| New York | NY |
| North Carolina | NC |
| North Dakota | ND |
| Northern Mariana Islands | MP |
| Ohio | OH |
| Oklahoma | OK |
| Oregon | OR |
| Palau | PW |
| Pennsylvania | PA |
| Puerto Rico | PR |
| Rhode Island | RI |
| South Carolina | SC |
| South Dakota | SD |
| Tennessee | TN |
| Texas | TX |
| Utah | UT |
| Vermont | VT |
| Virgin Islands | VI |
| Virginia | VA |
| Washington | WA |
| West Virginia | WV |
| Wisconsin | WI |
| Wyoming | WY |

**Technology Model: Appendix C:  Miami-Dade County Enterprise GIS Services**

**http://gisws.miamidade.gov**
**Standardized GIS Services Platform**

■ *Address Locator Services*

Miami-Dade County's GIS address locator services are updated weekly and hosted on the gisws ArcGIS server platform. Services available are:

- MDC_Locators/GeoAddress-20 – Geocodes against the GeoAddress feature class. GeoAddress is a point feature class of all addresses in Miami-Dade County. Points are located in the centroid of each property except in the cases where there are multiple addresses. Multiple addresses are located over the respective buildings. Match scores are set to a very low 20, which ensures a match every time but not always the correct one. This locator is most commonly used in an interactive process where the data entry user is presented multiple addresses to select from while assigning a valid Miami-Dade address to a record.
- MDC_Locators/GeoAddress – Designed the same as GeoAddress-20 however, the match scores are set higher to ensure a more exact match. This locator is more commonly used in batch processes.
- MDC_Locators/GeoStreet-20 – Geocodes against the GeoStreet feature class. GeoStreet is a line feature class which represents a street segment. An address range is assigned to each segment and the address is geo-located proportionately along this range. Match scores are set to a very low 20, which ensures a match every time but not always the correct one. This locator is most commonly used in an interactive process where the data entry user is presented multiple addresses to select from while assigning a valid Miami-Dade address to a record.
- MDC_Locators/GeoStreet - Designed the same as GeoStreet-20 however, the match scores are set higher to ensure a more exact match. This locator is more commonly used in batch processes.
- MDC_Locators/MD_Locator-20 – A composite locator, addresses are first located against GeoAddress-20 and if no match is found they are then located against GeoStreet-20.
- MDC_Locators/MD_Locator - A composite locator, addresses are first located against GeoAddress and if no match is found they are then located against GeoStreet.

■ *GIS WEB Services*

- ***Standardize***

This XML Web service formats an input address with Miami-Dade County – USPS Address Standards. The following methods are available.

- **standardizeAddress**
  This XML Web service method returns a standardized address from the input address.

- **standardizeAddressParsed**
  This XML Web service method returns a standardized address from the parsed input address.

- **standardizeIntersection**
  This XML Web service method returns a standardized intersection from the input intersection.

- **standardizeIntersectionParsed**
  This XML Web service method returns a standardized intersection from the parsed input intersection.

- ***Verify***

This XML Web service identifies whether a provided address is a valid Miami-Dade County address. It also standardizes the given address using the Standardize WEB Service.

The service returns the following codes: Y, N, D or S.

Y indicates a valid **address**.

N indicates an invalid address.

D indicates a valid address and that more than one address exists in the MDC address database.

S indicates that the address does not exist in the MDC address database but does exist within the MDC address range database.

The following methods are supported.

- **VerifyAddress**
  This XML Web service method validates the input address.

- **VerifyAddressMunic**
  This XML Web service method validates the input address and Municipality Code.

- **VerifyAddressParsed**
  This XML Web service method validates the parsed input address.

- **VerifyAddressParsedMunic**
  This XML Web service method validates the parsed input address and Municipality Code.

- **VerifyAddressParsedZip**
  This XML Web service method validates the parsed input address and Zip Code.

- **VerifyAddressZip**
  This XML Web service method validates the input address and Zip Code.

- **VerifyIntersectionParsed**
  This XML Web service method validates the parsed input intersection.

- **VerifyIntesection**
  This XML Web service method validates the input intersection.

- *AddrXY*

This XML Web service returns NAD 83 State Plane X and Y coordinate if provided a valid Miami-Dade County address.

The following methods are supported.

- **XYAddress**
  This XML Web service method returns X, Y Coordinate(s) for the input address.

- **XYAddressMunic**
  This XML Web service method returns X, Y Coordinate for the input address and Municipality Code.

- **XYAddressParsed**
  This XML Web service method returns X, Y Coordinate(s) for the parsed input address.

- **XYAddressParsedMunic**
  This XML Web service method returns X, Y Coordinate for the parsed input address and Municipality Code.

- **XYAddressParsedZip**
  This XML Web service method returns X, Y Coordinate for the parsed input address and Zip Code.

- **XYAddressZip**
  This XML Web service method returns X, Y Coordinate for the input address and Zip Code.

- **XYIntersection**
  This XML Web service method returns X, Y Coordinate(s) for the input intersection.

- **XYIntersectionParsed**
  This XML Web service method returns X, Y Coordinate(s) for the parsed input intersection.

- **XYStreetParsedZip**
  This XML Web service method returns X, Y Coordinate(s) for the parsed input address and Zip code geocoding against street.

- **XYStreetZip**
  This XML Web service method returns X, Y Coordinate(s) for the input address and Zip code geocoding against street.

- *AddressWebService*

This XML Web service combines the other WEB services (including standardize) to produce results. Results include standardized address parsed and non-parsed, identifies which geodatabase the address matched against, and if the address validated against the exact match database the service also returns x/y coordinates, folio, cluc, zip code, and munic_code.

- **Address**
  This XML Web service method returns the first found X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the input address.

- **AddressD**
  This XML Web service method returns multiple X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the duplicated address.

- **AddressMunic**
  This XML Web service method returns X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the input address and Municipality code.

- **AddressMunicParsed**
  This XML Web service method returns X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the Parsed input address and Municipality code.

- **AddressParsed**
  This XML Web service method returns the first found X, Y Coordinate, Folio, CLUC, Standardized Address and Validation result for the Parsed input address.

- **AddressParsedD**
  This XML Web service method returns multiple X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the Parsed duplicated address.

- **AddressZip**
  This XML Web service method returns X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the input address and zip code.

- **AddressZipParsed**
  This XML Web service method returns X, Y Coordinate, Folio, Cluc, Standardized Address and Validation result for the Parsed input address and zip code.

- **Intersection**
  This XML Web service method returns the first found X, Y Coordinate, Standardized Intersection and Validation result for the input Intersection.

- **IntersectionD**
  This XML Web service method returns multiple X, Y Coordinate, Standardized Intersection and Validation result for the duplicated Intersection.

- **IntersectionParsed**
  This XML Web service method returns the first found X, Y Coordinate, Standardized Intersection and Validation result for the input Intersection.

- **IntersectionParsedD**
  This XML Web service method returns multiple X, Y Coordinate, Standardized Intersection and Validation result for the Parsed duplicated Intersection.

- *FolioCluc*

This XML Web service returns Folio number and CLUC value given a valid Miami-Dade County address.

The following methods are supported.

- **FolCluc**
  This XML Web service method returns FOLIO numbers and CLUC values for the input address.

- **FolClucMunic**
  This XML Web service method returns FOLIO number and CLUC value for the input address and Municipality Code.

- **FolClucParsed**
  This XML Web service method returns FOLIO numbers and CLUC values for the parsed input address.

- **FolClucParsedMunic**
  This XML Web service method returns FOLIO number and CLUC value for the parsed input address and Municipality Code.

- **FolClucParsedZip**
  This XML Web service method returns FOLIO number and CLUC value for the parsed input address and Zip Code.

- **FolClucZip**
  This XML Web service method returns FOLIO number and CLUC value for the input address and Zip Code.

- *Condo*

This XML Web service returns condo folio numbers that are related with the provided a parent address or folio within Miami-Dade County.

The following methods are supported.

- **CondoAddressMunic**
  This XML Web service method returns condo folio numbers that are related with the parent address and Municipality Code.

- **CondoAddressParsedMunic**
  This XML Web service method returns condo folio numbers that are related with the parsed parent address and Municipality Code.

- **CondoAddressParsedZip**
  This XML Web service method returns condo folio numbers that are related with the parsed parent address and Zip Code.

- **CondoAddressZip**
  This XML Web service method returns condo folio numbers that are related with the parent address and Zip Code.

- **ParentChildFolio**
  This XML Web service method returns children folio numbers and addresses information for the input parent folio number.

- **ParentFolio**
  This XML Web service method returns parent folio number for the input child folio number.

- *GeoProperty*

This XML Web service returns GeoProperty values: Subunit, zip code, condo flag, county land use code, township/range/section (ttrrss), commissioner district, election precinct, census tract 2000, police grid, traffic analysis zone, community council, subarea, zoning code, flood zone, and state plane x/y coordinate if provided a valid Miami-Dade County addresses.

The following methods are supported.

- **GeoProperty**
  This XML Web service method returns a standard address and other location identifiers for the input address and Zipcode through a geoprocess.

- **GeoPropertyParsed**
  This XML Web service method returns a standard address and other location identifiers for the input address and Zipcode through a geoprocess.

- *GeoIntersect*

This XML Web service returns the attributes of the feature in the specified Feature Class that intersects the specified X and Y.

The following operations are supported.

- **GetAllFieldsRecords**
  This XML Web service method returns a DataTable, with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetAllFieldsRecords_DS**
  This XML Web service method returns a DataSet with a DataTable with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetAllFieldsRecords_DS_LocalData**
  This XML Web service method returns a DataSet with a DataTable with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetAllFieldsRecords_LocalData**
  This XML Web service method returns a DataTable, with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetAllFieldsRecords_XML**
  This XML Web service method returns an XML document with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetAllFieldsRecords_XML_LocalData**
  This XML Web service method returns an XML document with the values of all field for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetSpecifiedFieldsRecords**
  This XML Web service method returns a DataTable, with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetSpecifiedFieldsRecords_DS**
  This XML Web service method returns a DataSet with a DataTable with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetSpecifiedFieldsRecords_DS_LocalData**
  This XML Web service method returns a DataSet with a DataTable with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetSpecifiedFieldsRecords_LocalData**
  This XML Web service method returns a DataTable, with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetSpecifiedFieldsRecords_XML**
  This XML Web service method returns an XML document with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class.

- **GetSpecifiedFieldsRecords_XML_LocalData**
  This XML Web service method returns an XML document with the values of the specified comma-separated fields for the feature(s) intersecting the specified x and y in the given polygon feature Class. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- *GeoAttribute*

  This XML Web service returns the attributes of the feature(s) or records in the specified Feature Class or Table, given a field to search on, and the field's value.

  The following operations are supported.

  - GetAllFieldsRecordsGivenAFieldNameAndValue
    This XML Web service method returns a DataTable, with the values of all fields for the feature(s) or record(s) selected on the specified Feature class or Table, given the name of the field to search on, and the field's value. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
    If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.

  - GetAllFieldsRecordsGivenAFieldNameAndValue_DS
    This XML Web service method returns a DataSet with a DataTable, with the values of all fields for the feature(s) or record(s) selected on the specified Feature class or Table, given the name of the field to search on, and the field's value. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24: MI:SS' Example: '2008-07-08 10:25:03'.
    If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using

'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.

- **GetAllFieldsRecordsGivenAFieldNameAndValue_DS_LocalData**
  This XML Web service method returns a DataSet with a DataTable, with the values of all fields for the feature(s) or record(s) selected on the specified Feature class or Table, given the name of the field to search on, and the field's value. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.
  NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetAllFieldsRecordsGivenAFieldNameAndValue_LocalData**
  This XML Web service method returns a DataTable, with the values of all fields for the feature(s) or record(s) selected on the specified Feature class or Table, given the name of the field to search on, and the field's value. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.
  NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetSpecifiedFieldsRecordsGivenAFieldNameAndValue**
  This XML Web service method returns a DataTable, with the values of the specified fields for the feature(s) or record(s) selected on the specified Feature Class or Table, given the name of the field to search on, the field's value, and a string of fields names to be returned separated by commas. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.

- **GetSpecifiedFieldsRecordsGivenAFieldNameAndValue_DS**
  This XML Web service method returns a DataSet with a DataTable, with the values of the specified fields for the feature(s) or record(s) selected on the specified Feature Class or Table, given the name of the field to search on, the field's value, and a string of fields names to be returned separated by commas. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out.

Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.

- GetSpecifiedFieldsRecordsGivenAFieldNameAndValue_DS_LocalData
  This XML Web service method returns a DataSet with a DataTable, with the values of the specified fields for the feature(s) or record(s) selected on the specified Feature Class or Table, given the name of the field to search on, the field's value, and a string of fields names to be returned separated by commas. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.
  NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- GetSpecifiedFieldsRecordsGivenAFieldNameAndValue_LocalData
  This XML Web service method returns a DataTable, with the values of the specified fields for the feature(s) or record(s) selected on the specified Feature Class or Table, given the name of the field to search on, the field's value, and a string of fields names to be returned separated by commas. Valid field types to search on are: Numeric, String or Date. If value type 'Date' is used the value string must be in the following format 'YYYY-MM-DD HH24:MI:SS' Example: '2008-07-08 10:25:03'.
  If your request returns to many records you may need in your application to increase the time the XML Web Service client waits for synchronous XML Web Service request to complete (in milliseconds) by using 'Service.Timeout = -1' where Service is the object pointing to this Web Service. Use -1 to set an Infinite time out. Also, you may need to increase your httpRuntime executionTimeout. One way to do it is adding the line <httpRuntime executionTimeout=(Here goes the number of seconds)/> between the <system.web> tabs in your Web.Config.
  NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- ***XYLatLongConversionsClass***

This XML Web service is a projection service between X/Y coordinates and Longitude and Latitude. The following operations are supported:

- getLatLongDecFromXY
  This XML Web service method returns the longitude and latitude in decimal for the given X/Y coordinate as a double array.

- **getLatLongDegreeFromXY**
  This XML Web service method returns, as a String Array, the longitude and latitude in Degrees Minutes format, for the given X/Y coordinates.

- **getLatLongInDegMinSecFromXY**
  This XML Web service method returns, as a String Array, the longitude and latitude in Degrees Minutes Seconds format, for the given X/Y coordinates.

- **getXYfromLatLongDec**
  This XML Web service method returns the X/Y coordinate for the given longitude and latitude in a decimal as a double array.

- **getXYfromLatLongDegree**
  This XML Web service method returns, as a double array, the X/Y coordinates for the given longitude and latitude in Degrees Minutes format.

- **getXYfromLatLongInDegMinSec**
  This XML Web service method returns, as a Double array, the X/Y coordinates for the given longitude and latitude in Degrees Minutes Seconds format.

- *GetClosestFeatureClass*

This XML Web service has methods for returning attributes of the closest features to X/Y inputs. A list of the GIS feature classes can be found at \\s0140158\geodatabase\Standards and is called datainfo.xls . The following operations are supported:

- **GetClosestFeatureFromXY**
  This XML Web service method returns closest Features(ordered by distance) for a given X/Y coordinate, an X integer in feet for buffer to create around coordinate, and Feature Class name to query.***Specify named attributes by semi-colon delimited list

- **GetClosestFeatureFromXYAllAtrbts**
  This XML Web service method returns closest Features(ordered by distance) for a given X/Y coordinate, an X integer in feet for buffer to create around coordinate, and Feature Class name to query.***All attributes returned

- **GetClosestFeatureFromXYAllAtrbts_LocalData**
  This XML Web service method returns closest Features(ordered by distance) from a given X/Y coordinate, an X integer in feet for buffer to create around coordinate, and Feature Class name to query.***All attributes returned. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **GetClosestFeatureFromXY_LocalData**
  This XML Web service method returns closest Features(ordered by distance) for a given X/Y coordinate, an X integer in feet for buffer to create around coordinate, and Feature Class name to query.***Specify named attributes by semi-colon delimited list. NOTE: This method searches a database stored locally in the same server as this WebService; not all the data currently in SDE is available locally.

- **getFolioFromXY**
  This XML Web service method returns top Folio Numbers for a given X/Y coordinate and a 500 feet buffer created around the coordinate.

- **getStreetIDFromXY**
  This XML Web service method returns top Street IDs for a given X/Y coordinate and a 500 feet buffer created around the coordinate.

- *MDCWService*

Xml webservice with utility methods. The following operations are supported:

- SaveErrorLogToTextFile
  Gets the error that occurred within the application and saves it to a text file

- SendMessage

- *searchSRVCClass*

This web service is the general search result of PTXGIS, INTERSECTION, ZIPCODE, LANDMRKS, CommissionDistrict, Daycare, SchoolSite, CharterSchool, College, and PrivateSchool and can receive the name of an XML to add to search for a given query. The following operations are supported.

- **AddressSearchUsingLocators**
  This WebMethod is used search addresses using Miami Dade GIS locators

- **SearchUsingCustomXMLFile**
  Method accepts the user's search criteria, and an XML file name as parameters. The XML file will contain the different datasets, the applications will be using and searching for. If not xml document is provided it will search for address\intersections only. It also detects if search criteria is an address, or a folio # to avoid doing unnecessary queries

- **searchSRVCmethod**
  Pass user search request, the XML file name placed inside the folder XMLdynamic 'NOXML', and pass whether you want 'ALL', 'NONE', or a specific search by passing 'address', 'intersect', 'zip', 'landmarks', 'districts', 'schools', and or 'munic' delimited by semi-colon(s)(';').

■    *Map Cache Services*

- ***Community Map***

http://server.arcgisonline.com/ArcGIS/rest/services/World_Topo_Map/MapServer

**Service Description:**  Miami-Dade County Data hosted by Esri (ArcGIS Online) as a function of ESRI's Community Base Map program, WGS84, updated monthly.

- ***MDC Base Map Caches***

  - MapCache/BaseMap
  - MapCache/BaseMap WGS84
  - MapCache/MDCFloodZones
  - MapCache/MDCImagery
  - MapCache/MDCImagery WGS84

**Technology Model: Appendix D: Miami-Dade County GIS Central Data Repository Layers**

| FEATURE DATASET | FEATURE CLASS | DESCRIPTION |
|---|---|---|
| ActiveAsbuiltSupplementalInformationSystem | AASIS | Active AsBuilt Supplemental Information System |
| ActiveAsbuiltSupplementalInformationSystem | HASIS | Historical AsBuilt Supplemental Information System |
| BikeFacility | BikeLane | Bicycle Lanes |
| BikeFacility | PavedPath | Bicycle Paved Paths |
| BikeFacility | PavedShoulder | Bicycle Paved Shoulders |
| BikeFacility | WideCurbLane | Bicycle Wide Curb Lanes |
| Broadband | MDBroadbandNoWireline | NoWireline Broadband areas within Miami-Dade County. |
| Broadband | MDBroadbandInadequate | Inadequate (less 3 Mbps) Broadband Wireline Service within Miami-Dade County |
| Broadband | MDBroadbandProvider | Broadband Providers within Miami-Dade County |
| Broadband | MDBroadbandUnserved | Unserved Broadband areas within Miami-Dade County |
| Budget | CommunityBasedOrganization | Community Based Organization (CBO) Funded |
| Budget | CommunityBasedOrganization2012 | Community Based Organization (CBO) Funded during 2011-2012 fiscal year |
| BuildingCertificate | CertificateOfUse | Building Certificate of Use |
| BuildingCertificate | CertificateOfOccupancyNComp | Certificate of Occupancy and Completion |
| BuildingPlanimetric | SmallBuilding | 2012 Small Buildings Planimetric locations |
| BuildingPlanimetric | LargeBuilding | 2013 Large buildings planimetric footprint |
| Buildings2001 | SmallBuilding2001 | 2001 Small Buildings Planimetrics |
| Buildings2001 | LargeBuilding2001 | 2001 Large Buildings Planimetrics |
| Buildings2005 | SmallBuilding2005 | 2005 Small Buildings Planimetrics |
| Buildings2005 | LargeBuilding2005 | 2005 Large Buildings Planimetrics |
| CareService | AdultCareFacility | Adult Care Facilities |
| CareService | AdultLivingFacility | Adult Living Facilities |
| CareService | Daycare | Day Care Centers within Miami-Dade County |
| CareService | DCFFacility | DCF Facilities |
| CareService | IntermediateCareFacility | IntermediateCareFacility |

| CareService | NursingHome | Nursing Homes |
|---|---|---|
| CartoLayers | CartoStreets | Cartographic Streets |
| CDMP | Landuse | Future Landuse from Comprehensive Development Master Plan. |
| Census1990 | Block90 | 1990 Census Blocks - Unaligned |
| Census1990 | BlockGroup90 | 1990 Census Block Groups - Unaligned |
| Census1990 | BlockStreet90 | 1990 Census Blocks created from Street Network |
| Census1990 | Place90 | 1990 Census Places - Unaligned |
| Census1990 | Tiger90_line | 1990 Original Census Tiger Line |
| Census1990 | Tiger90_poly | 1990 Original Census Tiger Boundary |
| Census1990 | Tract90AlignCoastal | 1990 Census Tracts to Coastline - Aligned |
| Census1990 | Tract90UnalignCoastal | 1990 Census Tracks to Coastline - Unaligned |
| Census1990 | Tract90UnalignFull | 1990 Census Tracts Full Boundary - Unaligned |
| Census2000 | Block | 2000 Census Blocks - Aligned |
| Census2000 | BlockGroup | 2000 Census Block Groups - Aligned |
| Census2000 | BlockSite | 2000 Census Block Site |
| Census2000 | DesignatedPlace | 2000 Census Designated Places - Aligned |
| Census2000 | LowModerateBlockGroup | 2000 Census Low-Moderate (Community Development) Block Groups - Aligned |
| Census2000 | Tract | 2000 Census Tracts - Aligned |
| Census2010 | Block10_Unaligned | 2010 Census Blocks - Unaligned |
| Census2010 | BlockGroup10_Unaligned | 2010 Census Block Groups - Unaligned |
| Census2010 | DesignatedPlace10_Unaligned | 2010 Census Designated Place - Unaligned |
| Census2010 | Tract10_Unaligned | 2010 Census Tract - Unaligned |
| Census2010 | Block10_Aligned | 2010 Census Blocks - Aligned |
| Census2010 | BlockGroup10_Aligned | 2010 Census Block Groups - Aligned |
| Census2010 | DesignatedPlace10_Aligned | 2010 Census Designated Place - Aligned |
| Census2010 | Tract10_Aligned | 2010 Census Tracts - Aligned |

| | | |
|---|---|---|
| Census2010 | Block10Pop | 2010 Census Blocks with 2010 Census Population figures |
| Census2010 | DesignatedPlace10Pop | 2010 Census Designated Place with 2010 Census Population |
| Census2010 | Tract10Pop | 2010 Census Tracts with 2010 Census Population |
| Census2010 | BlockGroup10Pop | 2010 Census Block Groups with 2010 Census Population |
| Census2010 | Block10Pop_pnt | 2010 Census Blocks Centroid with 2010 Census Population |
| Census2010 | BlockGroup10Pop_pnt | 2010 Census Block Groups Centroid with 2010 Census Population |
| Census2010 | Tract10Pop_pnt | 2010 Census Tracts Centroid with 2010 Census Population |
| Census2010 | DesignatedPlace10Pop_pnt | 2010 Census Designated Place Centroid with 2010 Census Population |
| CityDistrict | MiamiCityDistrict | City of Miami Commissioner Districts |
| CityDistrict | MiamiGardensDistrict | City of Miami Gardens Council Districts |
| CityDistrict | NorthMiamiDistrict | City of North Miami Council District |
| Contamination | ContaminatedSite | Contaminated Sites |
| Contamination | LandFill | Landfill Sites |
| Contamination | SuperFundSite | Superfund Sites (Hazardous Waste Facilities) |
| CorrectionRehabilitation | DetentionCenter | Detention Centers, Jails |
| CountyCityLimits | CommunityCouncil | Community Council |
| CountyCityLimits | CommunityCouncilSubarea | Community Council Subareas |
| CountyCityLimits | CountyOutline | County Outline Boundary |
| CountyCityLimits | MiamiDadeBoundary | Miami-Dade County, Outer Boundary |
| CountyCityLimits | Municipality_anno | Municipal Boundaries (out to the water) |
| CountyCityLimits | Municipality_line | Municipal Boundary line (out to the water) |
| CountyCityLimits | Municipality_poly | Municipal Boundaries (out to the water) |
| CountyCityLimits | MunicipalityCoastal_anno | Municipal Boundaries (up to the coastline) |
| CountyCityLimits | MunicipalityCoastal_line | Municipal Boundary line (up to the coastline) |
| CountyCityLimits | MunicipalityCoastal_poly | Municipal Boundaries (up to the coastline) |

| | | |
|---|---|---|
| CountyCityLimits | PANeighborhood | Major Neighborhoods Boundaries |
| CountyCityLimits | MunicipalAdvisoryCommittee | Municipal Advisory Committee (MAC) Boundaries. |
| CountyCityLimits | ProposedAnnexation | Proposed Annexation area |
| DERMRestricted | SaltWaterIntrusion | 2008 Salt Water Intrusion Line |
| DERMWaterSewer | SewerExtension | DERM Sewer Extensions |
| DERMWaterSewer | NoticeOfReqConnection_poly | Notice of Required Water and Sewer Connection |
| DERMWaterSewer | SewerOverflow | Sewer Overflow Incident Cases |
| DERMWaterSewerRestricted | NoticeOfReqConnection | DERM Notice of Required Connections |
| DevelopmentArea | CommunityDevelopmentDistrict | Community Development Districts |
| DevelopmentArea | CommunityRedevelopmentArea | Community Redevelopment Areas |
| DevelopmentArea | MinorStatisticalArea | Planning & Zoning Minor Statistical Area |
| DevelopmentArea | NeighborhoodRevitalizationArea | Neighborhood Revitalization Area |
| DevelopmentArea | TargetUrbanArea | Targeted Urban Area |
| DevelopmentArea | TargetUrbanAreaCorridor | Targeted Urban Areas Corridors |
| DevelopmentArea | NeighborhoodStabilizationProg | Neighborhood Stabilization Program |
| DevelopmentArea | ShorelineDevelopmentBoundary | Shoreline Development |
| EdgeOfPavement | EdgeOfPavement | 2013 Edge of Pavement planimetrIc lines |
| Educational | CharterSchool | Charter Schools |
| Educational | College | Colleges and Universities |
| Educational | HeadStart | Headstart and Early Headstart Centers |
| Educational | Library | Miami-Dade County Public Libraries |
| Educational | MunicipalLibrary | Municipal Public Libraries |
| Educational | PrivateSchool | Private Schools including State Registered |
| Educational | BookMobile | Library BookMobile |
| Electoral | CommissionDistrict | 2011 Commission Districts |
| Electoral | ElectionCollectCenterBoundary | Election Collection Center Boundary |
| Electoral | ElectionCollectionCenter | Election Collection Centers |
| Electoral | CongressionalDistrict | 2012 US House of Representatives (Congressional District) |
| Electoral | HouseDistrict | 2012 State House Districts |

| Electoral | PollingPlace | Voters Polling Places |
|---|---|---|
| Electoral | Precinct | Voting Precincts |
| Electoral | PrecinctGroup | Precinct Groups |
| Electoral | SenateDistrict | 2012 State Senate Districts |
| Electoral | SchoolBoardDistrict | 2012 Public School Board District |
| Electoral | EarlyVotingSite | Elections Early Voting Site |
| Electoral | CommissionerDistrictOffice | Commissioner District Office |
| ElectoralHistory | SchoolBoardDistrict2000 | 2000 Public School Board District |
| ElectoralHistory | CommissionDistrict1992 | 1992 Commission Districts |
| ElectoralHistory | CommissionDistrict2001 | 2001 Commission Districts |
| EmergencyManagement | HurricaneBusStop | Hurricane Bus Stop Locations |
| EmergencyManagement | HurricaneDebrisRemoval | Hurricane Debris Removal Routes |
| EmergencyManagement | HurricaneEvacZone | Hurricane Evacuation Zone (Storm Surge Planning Zone) |
| EmergencyManagement | HurricaneShelter | Hurricane Shelters |
| EmergencyManagement | PrimaryEvacuationRoute | Primary Evacuation Routes |
| EmergencyManagement | TurkeyPointRadii | Turkey Point Radius in Miles |
| EmergencyManagement | TurkeyPointSector | Turkey Point Sectors and Quadrants |
| EmergencyManagement | TurkeyPointArea | Turkey Point Plume Exposure Pathway Evacuation Area |
| EmergencyManagement | TurkeyPointArea_annobnd | Turkey Point Plume Exposure Pathway Evacuation Area - Boundary Annotation |
| EmergencyManagement | TurkeyPointArea_annoarea | Turkey Point Plume Exposure Pathway Evacuation Area - Area Annotation |
| EmergencyMngtHistorical | HurricaneEvacZone2003_2012 | Hurricane Evacuation Zone from 2003 to 2012 |
| EmergencyMngtRestricted | Consulate | Consulates in Miami-Dade County |
| EmergencyMngtRestricted | CriticalBridge | Critical Bridges in Miami-Dade County |
| EmergencyMngtRestricted | DialysisCenter | Dialysis Centers in Miami-Dade County |
| EmergencyMngtRestricted | EmergencyManagementLandmark | Emergency Management Landmarks |
| EmergencyMngtRestricted | Marina | Emergency Management Marinas |
| EmergencyMngtRestricted | PublicWorksFacility | Emergency Management Public Works Facilities |
| EmergencyMngtRestricted | CanalStructure | Canal Structures |

| | | |
|---|---|---|
| EmpowermentZone | Brownfield | Brownfield Locations |
| EmpowermentZone | DevelopableSite | 1998 Developable Sites |
| EmpowermentZone | EastWardHo | 1998 EastWard Ho |
| EmpowermentZone | EmpowermentZone_Line | 1998 Empowerment Zones Lines |
| EmpowermentZone | EmpowermentZone_poly | 1998 Empowerment Zones Boundaries |
| EmpowermentZone | EmpowermentZoneCTract | 1998 Empowerment Zones with Census Tracts |
| EmpowermentZone | EnterpriseZone | 2006 Enterprise Zones |
| Environmental | ArtificialReef | Artificial Reef Sites |
| Environmental | ArtificialReefSite | Artificial Reef Sites Boundary |
| Environmental | EnvQualityControlBoard | Environmental Quality Control Board Boundaries |
| Environmental | GasStation | Retail Gas Stations |
| Environmental | SaltWaterIntrusion95 | Salt Water Intrusion line as of 95 |
| Environmental | Soil | Soil Conversion Map |
| Environmental | SoilWaterConservationDistrict | Soil and Water Conservation District |
| Environmental Odor | OdorSource_poly | Odor location boundary |
| Environmental Odor | OdorSource | Odor location |
| Environmental Odor | OdorStation | Odor Station location |
| Environmental Odor | OdorComplaint | Odor Complaints and Inspections |
| Environmental Odor | OdorComplaintLandmark | Odor Complaint landmarks |
| FBIChemical | EPA_FRSFacility | EPA FRS Facilities |
| FBICommunication | AMRadioAntenna | AM Radio Antennas |
| FBICommunication | AntennaStructureRegistration | Antenna Structure Registration |
| FBICommunication | BRS_EBSTransmitter | BRS EBS Transmitters |
| FBICommunication | CellularTower | Cellular Towers |
| FBICommunication | FMRadioAntenna | FM Radio Antennas |
| FBICommunication | InternetExchangePoint | Internet Exchange Point |
| FBICommunication | InternetServiceProvider | Internet Service Providers |
| FBICommunication | LandMobileBroadcast | Land Mobile Broadcast Transmitter Sites |
| FBICommunication | LandMobileCommercial | Land Mobile Commercial Transmitter sites |
| FBICommunication | LandMobilePrivate | Land Mobile Private Service Transmitter sites |
| FBICommunication | MicrowaveTower | Microwave Service Sites |
| FBICommunication | PagingTransmitter | Paging Transmitters |
| FBICommunication | TVDigitalTransmitter | Digital Television Transmitter Sites |
| FBIDHSInfraAsset | DHSInfraAssetListDam | DHS infrastructure asset of Dams |

| | | |
|---|---|---|
| FBIDHSInfraAsset | DHSInfraAssetListPoint | DHS Infrastructure asset list of dams |
| FBIEnergy | ElectricPowerGeneratorPlan | Electric Power Generator Plants |
| FBIEnergy | EnergyDistribControlFacility | Energy Distribution Control Facilities |
| FBIEnergy | NaturalGasReceiptDelvryPoint | Natural Gas Receipt Delivery point |
| FBIEnergy | PowerTransmissionLine | Power Transmission Line |
| FBIEnergy | PowerTransmissionSubstation | Power Transmission Substations |
| FBIFinance | FDICBankMainOffice | FDIC Bank Main Offices |
| FBIFinance | Brokerage | Brokerages |
| FBIFinance | CreditUnionHeadQuarter | Credit Union Head Quarters |
| FBIFinance | FDICInsuredBank | FDIC Insured Banks |
| FBIFinance | FederalReserveBank | Federal Reserve Banks |
| FBIFinance | FinancialProcessingCenter | Financial Processing Centers |
| FBIFinance | InsuranceCompany | Insurance Companies |
| FBIGovernment | DiplomatMissionOffice | Diplomat Mission Office |
| FBIHazmat | HazmatRiskMngtPlan | Hazmat Risk Management Facilities |
| FBIStorage | SelfStorageFacility | Self-storage facilities |
| FireDept | FireStation | Fire Stations |
| FireDept | LifeSafetyInspDistrict | Life Safety Inspection District |
| FireDept | MunicipalFireStation | Municipal Fire Stations |
| FireDept | StationResponseServiceArea | Fire Station Response Service Areas |
| FireDept | CountywideClostFireStationArea | Countywide Closest Fire Station Area |
| FireDept | FireDistrictStationTerritory | Fire District Station Territories |
| FireDept | FDStationTerritoryInhabited | Fire District Station Territories clipped to the extent of inhabited areas |
| FireDept | FireRescueImpactFeeDistrict | Fire and Rescue Impact Benefit Fee District |
| FireDept | FireHydrantServiceArea | Fire Hydrant Service Areas |
| FloodInfrastructure | FEMAFloodZone | 2009 FEMA Flood Zones |
| FloodInfrastructure | FEMAPanel | 2009 FEMA Panel Flood Zones |
| FloodInfrastructure | CountyFloodCriteria | County Flood Criteria Contours |
| FloodInfrastructure | FEMAFloodZone1994 | 1994 FEMA Flood Hazard Zones |
| FloodInfrastructure | FEMAPanel1994 | 1994 FEMA Panels (Flood Zones) |
| FloodInfrastructure | CoastalAZone | Coastal A Zones |
| GeneralGovernment | Court | Courts |
| GeneralGovernment | CAAFacility | Community Action Agency Facilities |

| | | |
|---|---|---|
| GeneralGovernment | GSAFleetShop | GSA Fleet Repair Shops |
| GeneralGovernment | GSAFleetFuelSite | GSA Fleet Fuel Sites |
| GeneralGovernment | MDCLeaseProperty | County Leased Properties |
| GeneralGovernment | MDCOwnProperty | County Owned Properties |
| GeneralGovernment | PostOffice | Post Office Locations |
| GeneralGovernment | CityHall | City Halls within Miami-Dade County |
| GeoAddress | GeoAddress | Geocoded Address Locations |
| Geomatics | SubjectProperties | GIS layer for on-going zoning hearings |
| Geomatics | SubjectPropertyBuffer | GIS layer for zoning radius buffer applicable to type of zoning hearing |
| Geomatics | SubjectPropertyContiguous | GIS layer of properties that are contiguous (same owner/applicant) to subject property of hearing applicant |
| GeoNetwork | Street_Network | Routable Street Network |
| GeoStreets | GeoStreets | Miami-Dade County Streets |
| GeoStreets | ST_DADE | Miami-Dade County Streets (Coverage Structure) |
| GeoStreets | GeoIntersection | Geocoded Street Intersections |
| GeoStreets | GeoActualRanges | Street Network Actual Address Ranges |
| HealthCenter | CorrectionalHealthClinic | Health Clinics within Correctional Facilities |
| HealthCenter | FederallyQualifiedHealthCenter | Federally Qualified Health Center |
| HealthCenter | FreeStandingClinic | Free Standing Clinics |
| HealthCenter | HIVTestingCenter | HIV Testing Center |
| HealthCenter | JacksonPrimaryCareCenter | Jackson Primary Care Centers |
| HealthCenter | MentalHealthCenter | Mental Health Centers |
| HealthCenter | SchoolBasedClinic | School Base Clinics |
| HealthService | AmbulatorySurgicalCenter | Ambulatory Surgical Centers |
| HealthService | DOHHealthCenter | Department of Health Center Locations |
| HealthService | DOHWICCenter | Department of Health Women, Infant & Children Centers |
| HealthService | Hospital | Hospitals |
| HealthStatistic | CardiovascularMortality2006 | 2006 Cardiovascular Mortality by ZIPCode |
| HealthStatistic | CLRDMortality2006 | 2006 Chronic Lower Respiratory Disease (CLRD) Mortality |
| HealthStatistic | HospitalAdmission | Hospital Admission |

| | | |
|---|---|---|
| HealthStatistic | InfantMortality2006 | 2006 Infant Mortality by ZIP Code |
| HealthStatistic | LowBirthWeight | 2006 Low Birth Weight Percentage of babies born in Miami-Dade County |
| HealthStatistic | MedicaidEnrolled2007 | 2007 Medicaid Enrollment by ZIPCode |
| HealthStatistic | MortalityCount2006 | 2006 Mortality Count |
| HealthStatistic | PrenatalCare | 2006 First Trimester Prenatal Care Percentage of births in Miami-Dade County |
| HealthStatistic | TeenBirths2006 | Births by Teenaged Mothers |
| HealthStatistic | UninsuredByZipCode2004 | 2004 Uninsured by ZipCode |
| HealthStatistics2010 | CardiovascularMortality2010 | 2010 Cardiovascular mortality |
| HealthStatistics2010 | CLRDMortality2010 | 2010 CLRD Mortality |
| HealthStatistics2010 | HospitalAdmission2010 | 2010 Hospital Admission |
| HealthStatistics2010 | InfantMortality2010 | 2010 Infant Mortality |
| HealthStatistics2010 | LowBirthWeight2010 | 2010 Low Birth Weight |
| HealthStatistics2010 | MedicaidEnrolled2010 | 2010 Medicaid Enrolled |
| HealthStatistics2010 | MortalityCount2010 | 2010 MortalityCount |
| HealthStatistics2010 | PrenatalCare2010 | 2010 Prenatal Care |
| HealthStatistics2010 | TeenBirths2010 | 2010 Teen Births |
| Historical | FocusArea1998 | Focus Area |
| Historical | LandUse2000 | 2000 Landuse |
| Historical | UrbanDevelopmentBoundary2000 | 2000 Urban Development Area |
| Historical | UrbanExpansionArea2010 | 2010 Urban Expansion Area |
| Historical | UrbanInfillArea1998 | 1998 Urban Infill Area Line |
| Historical | LowModerateBlockGroup2000 | 2000 Census Low-Moderate Block Groups - aligned - Community Development Block Group |
| Historical | UrbanDevelopmentBoundary2005 | 2005 Urban Development Area |
| Historical | UrbanExpansionArea2015 | 2015 Urban Expansion Area |
| Historical | Water1999 | 1999 Canals, Lakes, Streams and Coastline Planimetrics (Modified) |
| Historical | WaterP1999 | Water Planimetrics derived from 1999 Aerial Photography |
| Historical | UrbanInfillArea1998_poly | 1998 Urban Infill Area polygon |
| HistoricalPreservation | ArcheologicalSite | Archeological Sites |
| HistoricalPreservation | ArcheologicalZone | Archeological Zones |
| HistoricalPreservation | HistoricDistrict | Historic Districts |
| HistoricalPreservation | HistoricSite | Historic Preservation Areas |

| HistoricalProperty1990s | Property1999May | Property as of May1999 |
|---|---|---|
| HistoricalProperty2000s | Property2002Oct | Property as of October 2002 |
| HistoricalProperty2000s | Property2003Oct | Property as of October 2003 |
| HistoricalProperty2000s | Property2006Oct | Property as of October 2006 |
| HistoricalProperty2000s | Property2007Oct | Property as of October 2007 |
| HistoricalProperty2000s | Property2008Nov | Property as of November 2008 |
| HistoricalProperty2000s | Property2009Jun | Property as of June 2009 |
| HistoricalProperty2000s | Property2004Nov | Property as of November 2004 |
| HistoricalProperty2000s | Property2005Oct | Property as of October 2005 |
| HistoricalProperty2010s | Property2010Oct | Property as of October 2010 |
| HistoricalProperty2010s | Property2011Nov | Property as of November 2011 |
| HistoricalProperty2010s | Property2012Dec | Property as of December 2012 |
| HistoricalProperty2010s | Property2013Jun | Property as of June 2013 |
| Hydrology | Canal | Canals |
| Hydrology | Lake | Lakes |
| Hydrology | Stream | Streams |
| Hydrology | Water | Water (Canals, Lakes, Streams and Coastline) Planimetrics Modified |
| Hydrology | WaterP | Water Planimetrics derived from 2012 Aerial Photography |
| Hydrology | WaterG | Water Planimetrics derived from 2012 Aerial Photography and water body to county limits (Generalized) |
| Hydrology | PrimaryCanalBasin | SFWMD Primary Canal Basin (CDMP Basin) |
| HydrologyHistorical | WaterG2007 | Water Planimetrics derived from 2007 Aerial Photography and water body to county limits (Generalized) |
| HydrologyHistorical | WaterP2007 | Water Planimetrics derived from 2007 Aerial Photography |
| IndexBoundary | DMLIndex | DML Index Boundary |
| IndexBoundary | GISSection | GIS Section Boundary |
| IndexBoundary | STLIndex_poly | STL Index Boundary |
| IndexBoundary | Township | MDC Township Boundary |
| IndexBoundary | USNationalGrid | US National Grid System for Miami-Dade |
| IndexBoundary | USNationalGrid1K | US National Grid System 1 Kilometer Grid |

| | | Sections for Miami-Dade |
|---|---|---|
| LandTopography | CoastalConstructionControlLine | Coastal Construction Control Line |
| LandTopography | Contour | Contour |
| LandTopography | CountyLandG | Miami-Dade County Land (Generalized) |
| LandTopography | Shoreline | Shoreline |
| LandTopography | USGS7Quad | USGS 7.5 minute Quad Sheet |
| LandTopography | USGSQuad | USGS Quads |
| LandTopography | SouthFloridaRegion | South Florida Region |
| LandTopography | AmericanIndianLand | American Indian Lands and Native Entities in Florida |
| LUMA | LUMA_LANDUSE | Existing Landuse (light-weight) |
| LUMA | LUMALanduse | Existing Landuse derived from LandUse Mapping Application for public. |
| MarineFacility | MarinaFacility | Marina Facilities |
| MarineNavigationalAid | MarineBuoy | Marine Buoy within Miami-Dade County |
| MarineNavigationalAid | MarineObservationStation | Weather Marine Observation Station |
| MarineNavigationalAid | MarineTransportNavigationAid | Marine Transportation Navigation Aid |
| MarineNavigationalAid | MooringBuoy_poly | Mooring Buoy polygon |
| MarineNavigationalAid | PopularMarineInlet | Popular Marine Inlet in Miami Bay area |
| Miami_ParcelModel | GISSectionGrid | GIS Section Boundary Aliquot parts of a Public Lands Survey System down to ten acre parts |
| Miami_ParcelModel | Lot_annos | Lot Annotations |
| Miami_ParcelModel | Lot_line | Lot Lines |
| Miami_ParcelModel | Lot_poly | Lot Polygons |
| Miami_ParcelModel | Parcel_annos | Parcel Annotations |
| Miami_ParcelModel | Parcel_line | Parcel Lines |
| Miami_ParcelModel | Parcel_poly | Parcel Polygons |
| Miami_ParcelModel | Subd_line | Subdivision Lines |
| Miami_ParcelModel | Subd_poly | Subdivision Polygons |
| Miami_ParcelModel | Ease_line | Easement Lines |
| ParkAdmin | ParkImpactFeeCollectionArea | Park Impact Fee Collection Area and Park Benefit Districts |
| Pavement | PavementMoratorium | Roadway Pavement Moratorium |
| PlanningZoning | UrbanDevelopmentBoundary | Urban Development Boundary |
| PlanningZoning | UrbanDevelopmentExpansion | Urban Development and Urban Expansion Boundaries |
| PlanningZoning | UrbanExpansionArea | 2025 Urban Expansion Area |

| PlanningZoning | ROZABoundary | Rock Mining Overlay Zoning Area |
|---|---|---|
| PlanningZoning | BirdRoadDistrict | Bird Road Design & Industrial Zoning District as defined in Chapter 33 of the Zoning Code, Section 33-278 and reflected in Ordinance #09-71. |
| PlanningZoning | EastEvergladesMgtArea | East Everglades Management Areas under Chapter 33B (Zoning Overlay Ordinance) of the Zoning Code |
| PlanningZoning | MunicipalFutureLandUse | Municipal Future LandUse |
| PoliceDept | MunicipalPoliceStation | Municipal Police Stations |
| PoliceDept | PoliceDistrict | MDPD Police Districts |
| PoliceDept | PoliceGrid_poly | Miami-Dade Police Grids Boundaries |
| PoliceDept | PolicePatrolArea | MDPD Police Patrol Areas |
| PoliceDept | PoliceStation | MDPD Police Stations |
| PoliceDept | PoliceGrid_Anno | Police Grid Boundary Annotations |
| PoliceDept | PoliceLandmark | MDPD Landmarks |
| PoliceDept | MunicipalPoliceGrid | Municipal Police Grids |
| PoliceDept | PoliceCourtServiceZone | MDPD Court Service Zone |
| PoliceDept | PoliceDistrictUrban | MDPD Police Districts Urban Area |
| PoliceDept | PoliceImpactFeeDistrict | Police Impact Fee District |
| PoliceDept | PoliceGridUrban | Police Grids in Urban Area |
| PoliceRestricted | PatrolableDistrict | MDPD Patrolable Districts |
| PoliceRestricted | PoliceQuadrant | Police Quadrants |
| PoliceRestricted | SuspiciousActivityReport | Suspicious Activity Reports |
| PoliceRestricted | CaribbeanHeatSubject | Caribbean Heat Subject |
| PoliceRestricted | MDPDNeighborhood | Miami-Dade Police Department Neighborhoods |
| PoliceRestricted | GangMember | Gang Member data from Criminal Justice Information System |
| PoliceRestricted | FelonyWarrant | Felony Warrants information from the Criminal Justice Information System (CJIS) |
| PoliceRestricted | PreIncidentFirePlanLocation | MDFR Pre Fire Incident locations |
| PoliceRestricted | StreetGang | Polygon Feature class of Street Gang turfs |

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|---|---|---|
| PoliceRestricted | PoliceAgency | Miami-Dade County Police Agency Boundaries |
| PoliceRestricted | WarrantsSquad | MDPD Warrants Bureau Squads |
| PoliceRestricted | WarrantsArea | MDPD Warrants Bureau Squad Areas |
| PoliceRestricted | MunicipalPoliceLandmark | Municipal Police Landmark |
| PoliceRestricted | PoliceLandmarkActive | Police Active Landmarks |
| PoliceRestricted | PoliceTargetedPatrol | Targeted Patrol Areas |
| PoliceRestricted | PolicePatrolAreaUrban | MDPD Police Patrol Area Urban |
| POMQBCommDataset | POMQBCmConduit | Port of Miami Quality Level B Communication Conduit |
| POMQBCommDataset | POMQBCmMiscPolyline | Port of Miami Quality Level B Communication MiscPolyline |
| POMQBCommDataset | POMQBCmCopperCable | Port of Miami Quality Level B Communication CopperCable |
| POMQBCommDataset | POMQBCmFiberCable | Port of Miami Quality Level B Communication FiberCable |
| POMQBCommDataset | POMQBCmMiscPoint | Port of Miami Quality Level B Communication MiscPoint |
| POMQBCommDataset | POMQBCmRiser | Port of Miami Quality Level B Communication Riser |
| POMQBCommDataset | POMQBCmPole | Port of Miami Quality Level B Communication Pole |
| POMQBCommDataset | POMQBCmHandhole | Port of Miami Quality Level B Communication Handhole |
| POMQBCommDataset | POMQBCmBuildingConnection | Port of Miami Quality Level B Communication BuildingConnection |
| POMQBCommDataset | POMQBCmManhole | Port of Miami Quality Level B Communication Manhole |
| POMQBCommDataset | POMQBCmVault | Port of Miami Quality Level B Communication Vault |
| POMQBCommDataset | POMQBCmPullbox | Port of Miami Quality Level B Communication Pullbox |
| POMQBCommDataset | POMQBCommNetwork_Junctions | Port of Miami Quality Level B Communication Network Junctions |
| POMQBCommDataset | POMQBConduitNetwork_Junctions | Port of Miami Quality Level B Communication Conduit Network Junctions |
| POMQBCommDataset | QBDuct | Port of Miami Quality Level B Communication Duct |

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|---|---|---|
| POMQBElectricalAsset | POMQBElRiser | Port of Miami Quality Level B Electrical Riser |
| POMQBElectricalAsset | POMQBElDataPoint | Port of Miami Quality Level B Electrical DataPoint |
| POMQBElectricalAsset | POMQBElConduit | Port of Miami Quality Level B Electrical Conduit |
| POMQBElectricalAsset | POMQBElMeter | Port of Miami Quality Level B Electrical Meter |
| POMQBElectricalAsset | POMQBElPedestal | Port of Miami Quality Level B Electrical Pedestal |
| POMQBElectricalAsset | POMQBElPole | Port of Miami Quality Level B Electrical Pole |
| POMQBElectricalAsset | POMQBElHandhole | Port of Miami Quality Level B Electrical Handhole |
| POMQBElectricalAsset | POMQBElManhole | Port of Miami Quality Level B Electrical Manhole |
| POMQBElectricalAsset | POMQBElVault | Port of Miami Quality Level B Electrical Vault |
| POMQBElectricalAsset | POMQBElPullBox | Port of Miami Quality Level B Electrical Pullbox |
| POMQBElectricalAsset | POMQBElGroundLight | Port of Miami Quality Level B Electrical GroundLight |
| POMQBElectricalNetwork | POMQBElectrical_Junctions | Port of Miami Quality Level B Electrical Electrical Network Junctions |
| POMQBElectricalNetwork | POMQBElUGPrimaryLine | Port of Miami Quality Level B Electrical UGPrimaryLine |
| POMQBElectricalNetwork | POMQBElOHPrimaryLine | Port of Miami Quality Level B Electrical OHPrimaryLine |
| POMQBElectricalNetwork | POMQBElBusBar | Port of Miami Quality Level B Electrical BusBar |
| POMQBElectricalNetwork | POMQBElOHSecondaryLine | Port of Miami Quality Level B Electrical OHSecondaryLine |
| POMQBElectricalNetwork | POMQBElUGSecondaryLine | Port of Miami Quality Level B Electrical UGSecondaryLine |
| POMQBElectricalNetwork | POMQBElUGSwitch | Port of Miami Quality Level B Electrical UGSwitch |
| POMQBElectricalNetwork | POMQBElFuse | Port of Miami Quality Level B Electrical Fuse |
| POMQBElectricalNetwork | POMQBElGenerator | Port of Miami Quality Level B Electrical Generator |

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|---|---|---|
| POMQBElectricalNetwork | POMQBElCapacitorBank | Port of Miami Quality Level B Electrical CapacitorBank |
| POMQBElectricalNetwork | POMQBElOHTransformer | Port of Miami Quality Level B Electrical OHTransformer |
| POMQBElectricalNetwork | POMQBElOHSwitch | Port of Miami Quality Level B Electrical OHSwitch |
| POMQBElectricalNetwork | POMQBElUGTransformer | Port of Miami Quality Level B Electrical UGTransformer |
| POMQBElectricalNetwork | POMQBElDynProtDev | Port of Miami Port of Miami Quality Level B Electrical DynProtDev |
| POMQBElectricalNetwork | POMQBElVoltageRegulator | Port of Miami Quality Level B Electrical Voltage Regulator |
| POMQBSewerCollectionNetwork | POMQBSAccessManhole | Port of Miami Quality Level B Sewer AccessManhole |
| POMQBSewerCollectionNetwork | POMQBSSystemValve | Port of Miami Quality Level B Sewer SystemValve |
| POMQBSewerCollectionNetwork | POMQBSPumpStation | Port of Miami Quality Level B Sewer PumpStation |
| POMQBSewerCollectionNetwork | POMQBSFitting | Port of Miami Quality Level B Sewer Fitting |
| POMQBSewerCollectionNetwork | POMQBSewerNetwork_Junctions | Port of Miami Quality Level B Sewer Network Junctions |
| POMQBSewerCollectionNetwork | POMQBSGravityMain | Port of Miami Quality Level B Sewer GravityMain |
| POMQBSewerCollectionNetwork | POMQBSShipDischargeLine | Port of Miami Quality Level B Sewer ShipDischargeLine |
| POMQBSewerCollectionNetwork | POMQBSAirReleaseValve | Port of Miami Quality Level B Sewer AirReleaseValve |
| POMQBSewerCollectionNetwork | POMQBSMiscellaneousPipe | Port of Miami Quality Level B Sewer MiscellaneousPipe |
| POMQBSewerCollectionNetwork | POMQBSSewerLateral | Port of Miami Quality Level B Sewer SewerLateral |
| POMQBSewerCollectionNetwork | POMQBSSeperatorLateral | Port of Miami Quality Level B Sewer SeperatorLateral |
| POMQBSewerCollectionNetwork | POMQBSForceMain | Port of Miami Quality Level B Sewer ForceMain |
| POMQBSewerCollectionNetwork | POMQBSManhole | Port of Miami Quality Level B Sewer Manhole |
| POMQBSewerCollectionNetwork | POMQBSCleanOut | Port of Miami Quality Level B Sewer CleanOut |

| | | |
|---|---|---|
| POMQBSewerCollectionNetwork | POMQBSControlValve | Port of Miami Quality Level B Sewer ControlValve |
| POMQBStormCollectionNetwork | POMQBStFlowLine | Port of Miami Quality Level B Storm FlowLine |
| POMQBStormCollectionNetwork | POMQBStCulvert | Port of Miami Quality Level B Storm Culvert |
| POMQBStormCollectionNetwork | POMQBStMiscellaneousPipe | Port of Miami Quality Level B Storm MiscellaneousPipe |
| POMQBStormCollectionNetwork | POMQBStDitch | Port of Miami Quality Level B Storm Ditch |
| POMQBStormCollectionNetwork | POMQBStPipe | Port of Miami Quality Level B Storm Pipe |
| POMQBStormCollectionNetwork | POMQBStManhole | Port of Miami Quality Level B Storm Manhole |
| POMQBStormCollectionNetwork | POMQBStInlet | Port of Miami Quality Level B Storm Inlet |
| POMQBStormCollectionNetwork | POMQBStMiscellaneousPoint | Port of Miami Quality Level B Storm MiscellaneousPoint |
| POMQBStormCollectionNetwork | POMQBStPrivatePoint | Port of Miami Quality Level B Storm PrivatePoint |
| POMQBStormCollectionNetwork | POMQBStormNetwork_Junctions | Port of Miami Quality Level B Storm Network Junctions |
| POMQBStormCollectionNetwork | POMQBWMain | Port of Miami Quality Level B Water Main |
| POMQBStormCollectionNetwork | POMQBWLateral | Port of Miami Quality Level B Water Lateral |
| POMQBStormCollectionNetwork | POMQBWControlValve | Port of Miami Quality Level B Water ControlValve |
| POMQBStormCollectionNetwork | POMQBWMeter | Port of Miami Quality Level B Water Meter |
| POMQBStormCollectionNetwork | POMQBWStructure | Port of Miami Quality Level B Water Structure |
| POMQBStormCollectionNetwork | POMQBWMiscPoint | Port of Miami Quality Level B Water MiscPoint |
| POMQBStormCollectionNetwork | POMQBWAccessManhole | Port of Miami Quality Level B Water AccessManhole |
| POMQBStormCollectionNetwork | POMQBWHydrant | Port of Miami Quality Level B Water Hydrant |
| POMQBStormCollectionNetwork | POMQBWBackflowPreventor | Port of Miami Quality Level B Water BackflowPreventor |
| POMQBStormCollectionNetwork | POMQBWSystemValve | Port of Miami Quality Level B Water SystemValve |
| POMQBStormCollectionNetwork | POMQBWFitting | Port of Miami Quality Level B Water Fitting |

| | | |
|---|---|---|
| POMQBStormCollectionNetwork | POMQBWServicePoint | Port of Miami Quality Level B Water ServicePoint |
| POMQBStormCollectionNetwork | POMQBWMiscPolyline | Port of Miami Quality Level B Water MiscPolyline |
| POMQBStormCollectionNetwork | POMQBWaterNetwork_Junctions | Port of Miami Quality Level B Water Network Junctions |
| Ports | Ports | Air and Sea Ports |
| Ports | Port_Anno | Air and Sea Ports Annotation |
| Ports | Port_poly | Air and Sea Ports Boundary |
| Ports | Port_Line | Air and Sea Ports Line |
| PropertyManagement | FLDBPRHomeOwnersAssociation | Florida Department of Business and Professional Regulation Home Owners Association (HOA) |
| PropertySales | PropImprovedSales2009 | 2009 Property Improved Sales |
| PropertySales | PropImprovedSales2010 | 2010 Property Improved Sales |
| PropertySales | PropVacantSales2009 | 2009 Property Vacant Sales |
| PropertySales | PropVacantSales2010 | 2010 Property Vacant Sales |
| PropertySales | PropVacantSales2011 | 2011 Property Vacant Sales |
| PropertySales | PropImprovedSales2011 | 2011 Property Improved Sales |
| PropertySales | PropMultipleSales | Parcels with more than one sale within the year. |
| PropertySales | PropImprovedSales2012 | 2012 Property Improved Sales |
| PropertySales | PropVacantSales2012 | 2012 Property Vacant Sales |
| PropertySales | PropImprovedSales2013 | 2013 Property Improved Sales |
| PropertySales | PropVacantSales2013 | 2013 Property Vacant Sales |
| PropertySales | PropVacantSales2014 | 2014 Property Vacant Sales |
| PropertySales | PropImprovedSales2014 | 2014 Property Improved Sales |
| PropertySales | PropImprovedSales2015 | 2015 Property Improved Sales |
| PropertySales | PropVacantSales2015 | 2015 Property Vacant Sales |
| ProtectedLand | EELSite | DERM Environmentally Endangered Land Sites |
| ProtectedLand | NaturalForestCommunity | DERM Natural Forest Communities |
| ProtectedLand | WellFieldProtectionArea | DERM Well Field Protection Areas |
| ProtectedLand | WetLandAOC | Wetland Area of Concern |

| | | |
|---|---|---|
| ProtectedLand | CHButterflyBartramsScrub | Critical Habitat Butterfly BartramГÇÖs Scrub-Hairstreak |
| ProtectedLand | CHButterflyFLLeafwing | Critical Habitat Butterfly Florida Leafwing |
| PublicSchool | ElementaryAttendanceBoundary | MDCPS Elementary Attendance Boundary |
| PublicSchool | HighAttendanceBoundary | MDCPS High Attendance Boundary |
| PublicSchool | MiddleAttendanceBoundary | MDCPS Middle Attendance Boundary |
| PublicSchool | SchoolSite | Miami-Dade Public Schools |
| PublicSchool | MDCPSBusStop | |
| PublicSchool | SchoolImpactFeeDistrict | School Impact Fee District |
| PublicWorks | StreetMaint | Street Maintenance (Public Works) |
| PublicWorks | Bridge | Bridges maintained by Public Works |
| Rails | MetroMover | MetroMover Routes |
| Rails | MetroMoverStations | MetroMover Stations |
| Rails | MetroRail | Metrorail Routes |
| Rails | MetroRailStations | Metrorail Stations |
| Rails | Rail | Railroads (Planimetric) |
| Rails | TriRail | Tri-Rail System |
| Recreational | CountyOperatedPark | County Operated Park Locations |
| Recreational | CountyParkBoundary | County Operated Park Boundaries |
| Recreational | HotelMotelInn | Hotel, Motel and Inn Locations |
| Recreational | MunicipalPark | Municipal Managed Park Locations |
| Recreational | MunicipalParkBoundary | Municipal Park Boundaries |
| Recreational | NatlStateParkPreserve | National, State, Park Preserves |
| Recreational | GolfCourse | Golf Courses |
| Recreational | MajorMall | Major Malls |
| Recreational | CultureVenue | Culture Venue managed by Miami-Dade County, Cultural Affairs |
| SALIPhone | SALIBusinessAndResidential | SALI (Standalone Automatic Location Identifier) Business and Residential phone data |
| Standalone | AtlasArea | WASD District Atlas Areas |
| Standalone | BuildingPermit | Building Permits (Unincorporated) |
| Standalone | CCVIOL | Office of Neighborhood Code Compliance Violation Location |
| Standalone | Conduit | Conduits |

| Standalone | CommercialProperty | Commercial Property Locations |
|---|---|---|
| Standalone | EOP_2001 | 2001 Edge of Pavement Lines |
| Standalone | EOP_cl_2001 | 2001 Edge of Pavement Centerlines |
| Standalone | FH | Fire Hydrants in the WASD Service Area (Library not completely populated - work in progress) |
| Standalone | HazardousMaterialSite | Hazardous Material Sites |
| Standalone | LANDMRKS | Landmark locations |
| Standalone | LPROP | Property Locations with Administrative attributes. |
| Standalone | LU1994 | 1994 Existing Land Use Boundaries |
| Standalone | LU1998 | 1998 Existing Land Use Boundaries |
| Standalone | MDCTelecommunicationSite | MDC Operated Telecommunication Sites |
| Standalone | MobileHome | Mobile Home & Trailer Park Locations |
| Standalone | PROP_PTX | Parcel Boundaries joined with PTX tables (No Condo Unit Information) |
| Standalone | PTXGIS | PTX Data converted to GIS format using Parcel Centroids |
| Standalone | PVT | Private Sewer Systems in the WASD Service Area (Library not completely populated - work in progress |
| Standalone | ZipCode | ZIPCode Boundaries |
| Standalone | BLUEBOOK | Miami-Dade Blue Book location (Employee Information) |
| Standalone | LisPendensProperty | Properties with Lis Pendens and notice of pending action |
| Standalone | ALTSTREETS | USPS Alternate Street names table |
| Standalone | LocalBusinessTax | Local Business Tax information extracted from our Local Business Tax (LBT) database |
| Standalone | TblLocalBusinessTax | Local Business Tax of business that did not Geocode |
| Standalone | MPO | Metropolitan Planning Organization |
| Standalone | Ease_annos | Easement Annotations |
| Standalone | ROW_poly | Right of Way Polygons |

| | | |
|---|---|---|
| Standalone | SWMEnforcementZone | Solid Waste Management Enforcement Zones |
| Standalone | WSAnno | WASD Street Annotations |
| Standalone | LocatorQrtGrid | WASD Locators Quarter Grid |
| Standalone | SALIBusiness | Bell South Business Phone Numbers and Locations |
| Standalone | SALIResidential | Bell South Residential Phone Numbers and Locations |
| Standalone | SERVSTAT_D | Customer Service Representative 311 Service Request Location |
| Standalone | SEXPRED | Sexual Predator Registered Address |
| Standalone | SEXPRED_PROP | Sexual Predator Registered Address Parcel Boundary |
| Standalone | WASDIndex | WASD Atlas Index Layer |
| Standalone | WASDStreetAnnotation | WASD Index Streets Annotation Layer |
| Standalone | WellFieldProtectionHead | Utility Drinking Water Well Head Locations |
| Standalone | DERMPermit | DERM Permit |
| Standalone | WSTreatmentPlant | Miami Dade Water and Sewer Treatment Plants Locations |
| Standalone | ForeclosureProperty | Forclosure Properties Real Estate Owned |
| Standalone | TBLSPTAXLUT | PA Special Taxing Table |
| Standalone | TBLPANeighborhood | Miami-Dade County Property Appraiser (PA) Neighborhood Codes table |
| Standalone | TBLOTHERELEMENTARY | Other Elementary Schools table (that share boundary and can be attended) |
| Standalone | TBLSLUC | State LandUse Code (SLUC) table |
| Standalone | TBLTEAMMETROOFFICE | Team Metro Offices Table |
| Standalone | TBLZONE | Planning and Zoning Zone Code Table |
| Standalone | TCONTACTS | GIS Data Contact Information |
| Standalone | TDOCUMENTS | GIS Data Information Document Information |
| Standalone | TENTITIES | GIS Data Information Application Relationship |
| Standalone | TENTITIES_TFEATURECLASSES | GIS Data Information Administration table |

| Standalone | TFEATUREDATASETS | GIS Data Information Application Dataset Foreign key |
|---|---|---|
| Standalone | TSTRATEGICAREAS | GIS Data Information Strategic Area Foreign Key |
| Standalone | ZONEDESCLUT | Zone Description Table |
| Standalone | ZONELUT | Miami-Dade County Zoning Code Description Table |
| Standalone | ZONELUT_ED_PD | Zone Look-up Table |
| Standalone | InfoUSABusinessData | Business Data acquired from InfoUSA |
| Standalone | ALTSTREETS2 | USPS standard alternate street names table 2 |
| Standalone | ANGLEDAT | Angles table for Section printing adjustments |
| Standalone | CLUCLUT | County Landuse code table |
| Standalone | CLUCLUT_ED_PD | County Landuse code table |
| Standalone | DEVCODE | |
| Standalone | ELECTION | |
| Standalone | FOLNOTRS | |
| Standalone | FOLTRS | |
| Standalone | GEONAME | |
| Standalone | GEONAMESTTYPE | |
| Standalone | GEONAMESTTYPE2 | |
| Standalone | GIS_DATA_INFORMATION | GIS Data Information table |
| Standalone | GIS_PUBLICDATA | Public GIS Data Information table |
| Standalone | GISCONDO | Condo tabular information |
| Standalone | GISSUBD | Subdivision depicted in GIS |
| Standalone | INTERSECTION | List of Valid Intersections Table |
| Standalone | LANDUSELUT | Miami-Dade Landuse Code table |
| Standalone | LUCOD | Miami-Dade Landuse Code and Category table |
| Standalone | LULUT | Miami-Dade Landuse Look-up table |
| Standalone | MPOTAB | |
| Standalone | MUNICLUT | Municipality Look up Table |
| Standalone | PAMSTR | Property Appraiser Master Table |
| Standalone | PARENTWEEK | Cancelled Parent Folio relationship information |
| Standalone | PCOMMISSLUT | Commission District Look up Table |
| Standalone | PFLOODZNLUT | Flood Zone Look up Table |

| Standalone | PLAN_TABLE | |
|---|---|---|
| Standalone | PTXBLDG | Property Tax Building Table |
| Standalone | PTXFEA | Property Tax Extra Feature Table |
| Standalone | PTXLAND | Property Tax Land Table |
| Standalone | PTXSALEASS | Property Tax Sales Table |
| Standalone | PTXTABS | Property Tax Table |
| Standalone | SEXPRED_TAB_NAME | Sexual Predator Table |
| Standalone | STANDARD_DIR | Standard Directions - Street and Address Maintenance Table |
| Standalone | STANDARD_TYPE | Standard Street Types - Street and Address Maintenance Table |
| Standalone | STREETNAME | Street Names - Street and Address Maintenance Table |
| Standalone | STREETTYPE | Street Types - Street and Address Maintenance Table |
| Standalone | STREETWITHACTUALRANGES | Actual Ranges - Street and Address Maintenance Table |
| Standalone | TBL2000POPBYBLOCK | 2000 Census Population by Blocks table |
| Standalone | TBL2000POPBYBLOCKGROUP | 2000 Census Population by Block Group table |
| Standalone | TBL2000POPBYCENSUSTRACT | 2000 Census Population by Census Tract table |
| Standalone | TBL2000POPBYDESIGNATEDPLACE | 2000 Census Population by Designated Place table |
| Standalone | TBLCLUC | Miami-Dade County LandUse Code (CLUC) table |
| Standalone | TBLCOMMISSIONDISTRICT | Commissioners and Commission Districts table |
| Standalone | TBLFLOODZONE | FEMA Flood Zones table |
| Standalone | TBLLANDMARK | Miami-Dade Landmark table |
| Standalone | TBLLANDUSE | Landuse table |
| Standalone | TBLLINETYPELUT | |
| Standalone | TBLMDPDLANDMARK | Miami-Dade Landmarks Table (without duplicate folios) |
| Standalone | TBLMUNICIPALITY | Municipal Code table |
| Standalone | GeoProp | Parcel Boundary with Geocoded Address Information |
| Standalone | ALTADDRESS | Alternate Addresses |

| | | |
|---|---|---|
| Standalone | TBLMDCTELEPHONESITECutDate | MDC Operated Telephone Site Cut_Date and Years of service |
| Standalone | TBLMDCTELEPHONESITEDEPT | Department Acronymns for the Telephone Site application |
| Standalone | TBLMDCTELEPHONESITEDID | DID Tabular information |
| Standalone | TBLDORCode | Department of Revenue Codes |
| Standalone | V_MOTOROLA_CAD_ALARM | MDFR Incidents by Alarm Number |
| Standalone | V_MOTOROLA_CAD_UNIT | MDFR Incidents by Unit Number |
| Standalone | TIME_DIMENSION | Cognos Filtering Date Matrix |
| Standalone | CALL_VOLUME | Cognos Subset of MDFR Alarm and Unit Tables |
| Standalone | MDFRUnitStation | MDFR Units and corresponding Stations in Tabular format |
| Standalone | ProjectSupportNewDevelopment | WASD Project Support New Development |
| Standalone | TBLPAPrimaryZone | Property Appraiser Primary Zone |
| Standalone | PA_LU_NH | Oracle lookup of table that contains the Neighborhood information. |
| Standalone | PA_LU_PERSONAL_X | Oracle lookup of table that contains lookup table for exemptions information |
| Standalone | PA_LU_QUALITY | Oracle quality lookup table |
| Standalone | PA_LU_SE_PCT | Oracle Element category lookup table |
| Standalone | PA_LU_STRCT_EL | Oracle Structural Element lookup table |
| Standalone | PA_LU_STRCT_EL_TP | Oracle Structural Element and types lookup table |
| Standalone | PA_LU_SUB | Oracle lookup of table that contains the Subdivision information |
| Standalone | PA_LU_TAX_DIST | Oracle lookup of table that contains lookup table for special taxing districts. |
| Standalone | PA_LU_TAX_ED | Oracle Exemption lookup table |
| Standalone | PA_LU_TAX_SPCL_DIST | Oracle lookup of table that contains Special Taxing Districts |
| Standalone | PA_LU_TAX_SPCL_TP | Oracle lookup of table that contains the special taxing districts and types. |

| Standalone | PA_LU_TENANCY | Oracle Tenancy lookup table |
|---|---|---|
| Standalone | PA_LU_XFOB | Oracle table of Property Appraisal Extra Features lookup table |
| Standalone | PA_OWNER | Oracle lookup of table that contains the List of Owners by folio |
| Standalone | PA_P_SPCL_DIST | Oracle table that contains the special Taxing Districts like Lighting by folio |
| Standalone | PA_PARCEL_REL | Oracle table that contains the parcel Relationship file for Back Assessments |
| Standalone | PA_PARCELDATA | Oracle table that contains the representation to the file you currently get from PTX |
| Standalone | PA_PERSONAL_X | Oracle table that contains the Percent of Ownership of the Exemptee |
| Standalone | PA_SALES | Oracle table that contains the sales information |
| Standalone | PA_SITE | Oracle table that contains the property address |
| Standalone | PA_TENANCY | Oracle table that contains the Percent ownership |
| Standalone | V_LEGAL_LN | View of the PA_LEGAL_IN table |
| Standalone | V_OWNER | View of the PA_Owner table |
| Standalone | V_PARCEL_REL | View of the PA_Parcel_Rel table |
| Standalone | V_PARENTWEEK | |
| Standalone | V_SALES | View of the PA_Sales table |
| Standalone | V_SITE | View of the PA_Sites table |
| Standalone | V_TENANCY | View of the PA_Tenancy table |
| Standalone | V_PTXTAB | View that combine:PA_Parceldata (TABLE), V_Owner, V_Sales, V_sites and V_Legal_IN views |
| Standalone | TBL_ZONES_DADE | Zoning codes for Unincorporated Miami-Dade County areas. |
| Standalone | WaterDonationLine | Water Donation Line SDE view |
| Standalone | SewerDonationLine | Sewer Donation Line SDE View |

| Standalone | PA_COLUMNINFO | Oracle table that contains the source name, columns and description of the all PAPublic |
|---|---|---|
| Standalone | PA_ASSESSMENT_REDUCTIONS | Oracle table that all county wide assessment reductions identified by folios |
| Standalone | PA_LEGAL_LN | Table of Miami-Dade County county-wide Property Legal description identified by Folio |
| Standalone | PA_LND_A | Oracle table that contains all county wide agriculture land identified by folios. |
| Standalone | PA_LND_C | Oracle table that contains all county wide common land identified by folios |
| Standalone | PA_LND_M | Oracle table that contains all county wide market land identified by folios |
| Standalone | PA_LU_ASSESSMENT_REDUCTIONS | Oracle lookup table that contains all assessment reduction |
| Standalone | TBLCountyDepartmentNOffice | County Departments and Offices table |
| Standalone | TBLUnincorporatedZoneDistrict | Table of relevant zoning parameters for Unincorporated Miami Dade Zoning Districts |
| Standalone | TblBldgPermitAppType | Building Permit Application Type code and description |
| Standalone | TblBldgPermitPropUse | Building Permit Property Use Code and Description |
| Standalone | TBLMDFRUnitStation | Table of Miami-Dade Fire Rescue Unit, Station and Battalion. |
| Standalone | PA_LU_BASE_RATE | Oracle lookup table that contains the Base Rate Code identified by folios |
| Standalone | PA_LU_CITY | Oracle lookup table that contains all Municipality |
| Standalone | PA_LU_COND | Oracle lookup table that contains condo information. |
| Standalone | PA_LU_CPLX_AMENITY | Oracle lookup table that contains Special Taxing Districts like Lighting by folio |
| Standalone | PA_LU_DOR | Oracle DOR lookup table |

| Standalone | PA_LU_DPR_98_TBL | Oracle lookup table that contains the depreciation, year and percent of the house |
| --- | --- | --- |
| Standalone | PA_LU_IMPR | Oracle lookup table that contains the improvement of the house |
| Standalone | PA_LU_LND_USE | Oracle lookup table that contains the CLUC & SLUC |
| Standalone | PA_LU_LND_ZONE | Oracle lookup of table that contains the Primary and Secondary Zone. |
| Standalone | PrelimSPCtbl | WASD Preliminary Water Service Point Connection lookup table |
| Standalone | PA_LU_QU_CD | Oracle table of Property Appraisal Qualification Description Coded |
| Standalone | PA_BLD | Oracle table of Property Appraiser Building Information |
| Standalone | PA_XFOB | Oracle table of Property Appraisal Extra Features |
| Standalone | TblLocalBusinessTaxCategory | Local Business Tax Category code and name table |
| Standalone | tblCBOGeneralFundSupport | Community Based Organization Awarded General Fund Support for FY 2013_2014 |
| Standalone | TblLocalBusinessTaxClass | Local Business Tax Class code and name table |
| Standalone | CRITICALLOCATIONS | Collection of Critical Locations |
| Standalone | TblCertificateOfOccpncyNComp | Table of Certificate of Occupancy & Completion unmatch records |
| Standalone | TblCertificateOfUse | Table of Certificate of Use unmatch records |
| Standalone | CRITICALLOCATIONS_POLY | Collection of Critical Location Boundaries |
| Standalone | tblYouthCommission | Table of County Commission selected Youth Commissioners |
| SurveyControlPoint | HorizontalControlPoint | Surveyed Horizontal Control Points |
| SurveyControlPoint | VerticalControlPoint | Surveyed Vertical Control Points |
| Telephone | MDCTelephoneSite | MDC Owned and Operated Telephone Systems sites |
| Telephone | TelephoneCentralOffice | AT&T Central Offices |

| TMAdmin | CommissionDistrictBlockGroup | Office of Neighborhood Compliance Commission District Block Groups |
|---|---|---|
| TMAdmin | NeighborhoodCodeOfficer | Office of Neighborhood Compliance Code Officers |
| TMAdmin | TMBoundary | Office of Neighborhood Compliance Boundaries |
| TMAdmin | TMSite | Office of Neighborhood Compliance Regional Offices |
| TMService | CrimeWatchArea | Office of Neighborhood Compliance Crime Watch Area |
| TMService | HomeOwnerAssociation | Office of Neighborhood Compliance Home Owners Association |
| TMService | MinimumHousing | Office of Neighborhood Compliance Minimum Housing |
| TMService | OutReach | Office of Neighborhood Compliance Out-Reach |
| TMService | PainterTerritory | Office of Neighborhood Compliance Painters Territory Boundaries |
| TMService | BNCTowZone | BNC Tow Zones |
| TrafficAnalysis | TAD1992 | 1990 Traffic Analysis Districts |
| TrafficAnalysis | TAZ1992 | 1990 Traffic Analysis Zones |
| TrafficAnalysis | TAZ2000 | 2000 Traffic Analysis Zone |
| TrafficAnalysis | TrafficAnalysisDistrict2010 | 2010 Traffic Analysis District |
| TrafficAnalysis | TrafficAnalysisZone2010 | 2010 Traffic Analysis Zone |
| TrafficAnalysis | TrafficAnalysisZone2010Emp | Traffic Analysis Zone 2010 with estimated 2010 Employment / Workers |
| TrafficAnalysis | TrafficAnalysisZone2010Pnt | Traffic Analysis Zone 2010 - Centroid point with estimated 2010 Employment / workers |
| TrafficConcurrency | MDCTrafficCountStation | Miami-Dade County, Traffic Count Station |
| Transportation | MajorRoads | Major Streets & Highways |
| Transportation | BusRoutes | Bus Routes |
| Transportation | BusStops | Bus Stops |
| Transportation | Highway | Main Highways |
| Transportation | Highway_anno | Highway Annotation |
| Transportation | RoadImpactFeeDistricts | Road Impact Fee Districts |
| Transportation | TrafficSignals | Traffic Signals |
| Transportation | MajorRoads_anno | Major Streets & Highway Annotations |

| Transportation | TPKMileMarkers | Turnpike Mile Markers |
|---|---|---|
| WASDCIS | CISCustomer | WASD Customer Information System Customer Location |
| WASDCIS | WSServicePoint | WASD CIS Customer Service location |
| WASDConsentDecree | GISMaintProjectTracking | Gis Maintenance Project Tracking |
| WASDFacility | MeterReadingOffice | WASD Meter Reading Offices |
| WASDFacility | FleetGarage | WASD Fleet Garage |
| WASDFacility | MaintenanceFacility | WASD Maintenance Facility |
| WASDGAMSVersion | GAMSSewerVersions | GAMS Sewer Version within Sewer Map Index |
| WASDGAMSVersion | GAMSWaterVersions | GAMS Water Version within Water Map Index |
| WASDIncident | SewerSpill | Sewer Spill Incidents |
| WASDMaintenanceArea | DayMeterTruck | WASD Meter Day Truck Areas |
| WASDMaintenanceArea | MeterReadingDistrict | WASD Meter Reading District Areas |
| WASDMaintenanceArea | NightMeterTruck | WASD Night Meter Trucks Area |
| WASDMaintenanceArea | PumpStationService | WASD Pump Station Service Areas |
| WASDMaintenanceArea | RepairCrew | WASD Repair Crew Areas |
| WASDMaintenanceArea | SaturdayMeterTruck | WASD Saturday Meter Truck Areas |
| WASDMaintenanceArea | SewerCollectionService | WASD Sewer Collection Service Areas |
| WASDMasterPlanning | CapacityStudyArea | WASD Capacity Study Area |
| WASDMasterPlanning | ConsConnChargesDistrict | WASD Construction Connection Charges District |
| WASDNewCustomer | Agreement | WASD New Customer Agreements |
| WASDNewCustomer | OrdinanceLetter | WASD New Customer Ordinance Letter |
| WASDNewCustomer | WASDAgreement | WASD New Customer Agreement SDE view |
| WASDNewCustomer | WASDLetterAvailability | WASD New Customer Letters of Availability SDE view |
| WASDNewCustomer | WASDOrdinanceLetter | WASD New Customer Ordinance Letter (Compliance letter for wholesale water and/or sewer customers development for payment of connection charges) |
| WASDNewCustomer | WASDVerificationForm | WASD New Customer Verification Forms SDE view |

| | | |
|---|---|---|
| WASDNewCustomer | VerificationForm | WASD Verification Forms |
| WASDNewCustomer | LetterAvailability | WASD Letters of Availability |
| WASDNewCustomer | Plat | WASD Plats |
| WASDNewCustomer | WellConnection | WASD Well Connection |
| WASDPcts | PCTSLine | Project Control and Tracking System Lines |
| WASDPcts | PCTSPoint | Project Control and Tracking System Points |
| WASDPsBasin | PSBasinWithoutVolumeCustomer | WASD Pump Station Basin Areas Without Volume Customer |
| WASDPsBasin | PumpStationBasin | WASD Pump Station Basin Areas |
| WASDPsBasin | PumpStationBasinOrig | WASD Pump Station Basin Original Areas |
| WASDRegion | SMapBookIndex | Miami Dade WASD Sewer Map Book (Atlas page) Index - Atlas layer |
| WASDRegion | WMapBookIndex | Miami Dade WASD Water Map Book (Atlas pages) Index layer |
| WASDServiceArea | SewerServiceArea | WASD Sewer Service Areas |
| WASDServiceArea | WaterServiceArea | WASD Water Service Areas |
| WASDSewerMerge | OcSewerAsBuilt | Sewer AsBuilt information with AsBuilt paths |
| WASDSewerMerge | SewerAsBuilt | Sewer AsBuilt information |
| WASDSewerMerge | SewerLine | Sewer Lines in the network model |
| WASDSewerMerge | SewerLineNotNet | Misc Sewer Lines not in the network model |
| WASDSewerMerge | SewerNode | Sewer points (Manhole, Valves, etc) |
| WASDSewerMerge | SewerNodeNotNet | Misc Sewer Points not in the network model |
| WASDSPConnection | ServicePointConnection | WASD Service Point Connection |
| WASDSPConnection | wLateralLine | WASD Later Lines |
| WASDSPConnection | wMain | WASD Main |
| WASDSunshine811 | SunshineOneCallTicket | WASD Sunshine One Call Ticket |
| WASDSunshine811 | HSunshineOneCallTicket | Historical Sunshine One Call Tickets |
| WASDTreatmentPlanDistrict | WasteWaterDistrict | WASD Waste Water Division Boundary |
| WASDTreatmentPlanDistrict | WaterDistrict | WASD Water Division Boundary |
| WASDTreatmentPlanDistrict | WaterDistrictFuture | Water District Future Service Areas |
| WASDUtilityDonation | WASDDonationSLine | Donations Sewer Lines |
| WASDUtilityDonation | WASDDonationSPoint | Donations Sewer Points |

| | | |
|---|---|---|
| WASDUtilityDonation | WASDDonationWLine | Donations Water Lines |
| WASDWaterMerge | OcWaterAsBuilt | Water AsBuilt information with AsBuilt paths |
| WASDWaterMerge | WaterAsBuilt | Water AsBuilt information |
| WASDWaterMerge | WaterLine | Water Lines in the network model |
| WASDWaterMerge | WaterLineNotNet | Misc Water Lines not in the network model |
| WASDWaterMerge | WaterNodeNotNet | Misc Water Points not in the network model |
| WASDWaterMerge | WaterNode | Miami Dade Water and Sewer Departments Water Node in Network data |
| WASDWaterResource | ComprehensiveDevMasterPlan | WASD Comprehensive Development Master Plan |
| WASDWaterResource | DevImpactCommittee | WASD Development Impact Committee |
| WASDWaterResource | DevRegionalImpact | WASD Development Regional Impact |
| WASDWaterResource | TaxingDistrict | WASD Taxing District |
| WASDWaterResource | UrbanDevBoundaryCommittee | WASD Urban Development Boundary Committee |
| WASDWaterResource | WaterSupplyWaterServiceArea | Water Supply to Water Service Area |
| WASDWaterResource | NorthMiamiWaterSupplyByWASD | North Miami Water Supplied By WASD |
| WASDWaterSPC | PrelimSPC | WASD Preliminary Water Service Point Connection |
| WASDWaterSPC | PrelimWSrvlne | WASD Preliminary Water Service Line |
| WASDWaterTreatmentPlantFacility | HIJPWellContract | Hialeah John Preston Well Contract |
| WASDWaterTreatmentPlantFacility | SDadeWellContract | South Dade Well Contract |
| WASDWaterTreatmentPlantFacility | AOWellContract | WASD Alexander Orr Facility Well Contract |
| WASDWaterTreatmentPlantFacility | AOBuildingContract | Alexander Orr Building Contracts |
| WASDWaterTreatmentPlantFacility | AOPlantFacility | Alexander Orr Facilities |
| WASDWaterTreatmentPlantFacility | AOWTPChemOtherLine | Alexander Orr Chemical Other Lines |
| WASDWaterTreatmentPlantFacility | AOWTPWaterLine | Alexander Orr Water Lines |
| WASDWaterTreatmentPlantFacility | HIBuildingContract | Hialeah Building Contracts |
| WASDWaterTreatmentPlantFacility | HIPlantFacility | Hialeah Facilities |
| WASDWaterTreatmentPlantFacility | HIWTPChemOtherLine | Hialeah Chemical Other Lines |

| WASDWaterTreatmentPlantFacility | HIWTPWaterLine | Hialeah Water Lines |
|---|---|---|
| WASDWaterTreatmentPlantFacility | JPBuildingContract | John Preston Contracts |
| WASDWaterTreatmentPlantFacility | JPPlantFacility | John Preston Facilities |
| WASDWaterTreatmentPlantFacility | JPWTPChemOtherLine | John Preston Chemical Other Lines |
| WASDWaterTreatmentPlantFacility | JPWTPWaterLine | John Preston Water Lines |
| WasteManagement | DumpSite | Solid Waste Management Sites (Landfill , Trash/Recycling Centers) |
| WasteManagement | GarbagePickupRoute | Solid Waste Management Garbage Pickup Routes Boundaries |
| WasteManagement | RecyclingRoute | Curbside Recycling Route Boundaries |
| WasteManagement | RecyclingZone | Curbside Recycling Zones |
| WasteManagement | WCSBulkyBook | Waste Collection Service Bulky Books |
| WasteManagement | DSWMServiceArea | Service Area for the Department of Solid Waste Management |
| WasteManagement | WCSArea | Waste Collection System Areas |
| WasteManagement | WCSZipcode | ZIPCode Zones used in WCS-GIS Daily batch jobs |
| WTDDDataset | DistWaterMain | WASD Distribution Water Main discrepancy |
| WTDDDataset | WNRevision | WASD WN Revision |
| WTDDDataset | WMGeneral | WASD WM General |
| WTDDDataset | WMABRevision | WASD WMAB Revision |
| WTDDDataset | DistWaterNode | WASD Distribution Water Node |
| WTDDDataset | DistWaterMeter | WASD Distribution Water Meter |
| Zoning_Model | Zone_line_I | Municipal zone boundaries and overlays derived from the Zoning |
| Zoning_Model | Zone_poly_I | Municipal zone areas and overlays derived from the Zoning |
| Zoning_Model | Zone_poly_U | County zone boundaries and overlays derived from the Zoning |
| Zoning_Model | MunicipalZone | Municipal Zones |

# Appendix C
# Cloud Service Usage Policy

History:

| Effective Date | Version | Version Date | Purpose of Revision | Author |
|---|---|---|---|---|
| | 0.1 | 11/15/2017 | Base Document | David Piniella |
| | 0.2 | 11/16/2017 | Extending scope, additional detail | David Piniella |
| | 1.0 | 09/26/2018 | Extending scope, additional detail | Lawrence Embil |

Overview:

The purpose of this policy is to provide guidance and governance pertaining to permitted usage of cloud services by Miami-Dade County.

Scope:

This standard applies to all departments, employees, contractors, consultants, temporary and other workers at MDC, including all personnel affiliated with third parties providing services to, or on behalf of MDC.

Authority:

This standard is being implemented under the authority of the ITD Department Director, and the Chief Security Officer (CSO) in compliance with **Administrative Order 10-11 (AO 10-11).**

Related Publications:

MDC Enterprise Information Security Policy Manual

Administrative Order 10-11 **(Privacy Standards)**

NIST Special Publication 800-122 Guide to Protecting the Confidentiality of Personally Identifiable Information (PII)

IBMid Password Requirements

IBM Cloud Services Agreement

Watson Cloud PII Data Standard

NIST Special Publication 500-291, Version 2

Supersedes:

In the event that this standard, in whole or in part, overlaps any portion of any other ITD information security policy, the most restrictive setting of those in question will take effect.

Definitions:

- **Cloud Services:** A computing or storage service hosted online or in a server/infrastructure/datacentre outside of Miami-Dade County's datacenter/infrastructure. Including but not limited to, Amazon Web Service (AWS), Microsoft Azure, Google Drive, Dropbox, Google Cloud Platform, IBM Cloud, VMWare Cloud, DigitalOcean, Rackspace, etc.

- **Software As A Service (SaaS):** Cloud computing service models include network access to business software applications hosted in the cloud by a third party.  This model allows costs of software development and hosting

to be shared among subscribers.  Business software in this category is often configurable to a limited extent with standard options offered to all subscribers.

- **Infrastructure As A Service (Iaas):** Cloud services which permit network access to traditional computing resources such as processing power and storage.

- **Platform As A Service (PaaS):** Cloud services which permit network access to an environment for agencies to use, build or operate their own software.

- **Bit locker:** Online storage repository site or service including (but not limited to) Dropbox, Google Drive, Microsoft OneDrive, Box, Apple iCloud, etc

- **Watson Analytics:** A smart data discovery service available on the cloud, it guides data exploration, automates predictive analytics and enables effortless dashboard and infographic creation.

- **Personally Identifiable Information (PII):** Information that can be used (either alone or in combination with other information) to identify, contact or locate a unique person. Examples include (but are not limited to): name, social security number, address, birth date, telephone number, account numbers, etc.

- **Service Organization Control report (SOC2):** Service Organization Controls reports are designed to help service organizations, organizations that operate information systems and provide information system services to other entities, build trust and confidence in their service delivery processes and controls

Content:

A. Cloud services (SaaS, PaaS or IaaS) are not allowed for Miami-Dade County use except as an exemption from the Enterprise Security Office or according to the provisions of this standard. Miami-Dade County departments and individuals are allowed to request an exemption for a specific cloud service.
B. A request for exemption from the MDC Enterprise Security Office for any Cloud service shall be submitted by way of a Security Review Request and include the following documentation:
   a. Description of the project for which an exemption is requested.  The description shall include the name of the service (application), its function, and its intended use by the agency. In addition, the description shall identify the hosting entity, the entity that provides the service (developer) and supports the service (maintains, provides trouble support, etc.), and the locations at which the service will be hosted.
   b. Assurance that the agency has submitted a Business Case to MDC/ESO, or information in lieu of these items required by the Request for Exemption form.
   c. A security review for the proposed usage, including business impact and security implications/risks posed.
   d. Appropriate back-up, data retention, and recovery services to meet the needs of the agency and that state data can be retrieved should it be necessary.
   e. Data protection measures including encryption of sensitive data at rest and sensitive data in while being transmitted. This includes data stored on or transmitted to portable devices. Encryption keys will be maintained by the data owner or in a key escrow of MDC's choosing.
C. Cloud providers servicing MDC departments or individuals should have SOC2 reporting capabilities available. Appropriate audit and security controls must be available, in place and in use with the appropriate level of care required for the data classification involved (PII, PCI, CJIS, HIPAA, etc).
D. Cloud Service providers must have Risk Management policies and strategies in place to mitigate data security risks and safety. FedRAMP certification is preferred but not required.
E. Cloud Service used must store or limit MDC-affiliated data within the continental United States (CONUS). Use of non-US cloud computing resources (storage, processing, analysis etc) is not permitted.

F. Cloud computing agreements between Miami-Dade County and any service providers must specify that Miami-Dade County data ownership is retained by Miami-Dade County and non-Miami-Dade County usage of MDC-related data, specifically including but not limited to PII, PCI, HIPAA and CJIS data is not permitted. Data will be stored and located in servers/datacenters within the continental US. Any use of Miami-Dade County data with any cloud services providers will allow for export and removal of Miami-Dade County data from the cloud service providers use/control upon request.

G. Cloud computing providers will have availability and disaster recovery policies and strategies policies and strategies in place to ensure mission-critical data or resources are available if required for business continuity purposes.

H. Cloud service providers will perform criminal background checks on staff and subcontractors.

I. Cloud service provider agreements must provide for orderly data transfer in an agreeable format in the event of termination and suspension of service. Contracts will set out specific time periods in which the service provider must continue to maintain the data. The service provider agrees to provide any post-termination assistance that it generally makes available to other clients, unless the parties agree to a specific and unique procedure in the SLA. The service provider agrees to destroy all data when requested by the public jurisdiction in accordance with NIST-approved methods and provide a certificate of destruction.

Exceptions:

All exception requests must be submitted for approval through the Network Service Desk (nsd) or Remedy service queue. Verbal and email approvals will not be accepted.

Review:

This standard will be reviewed one (1) year from the effective date, and every two (2) years thereafter.

This standard will be reviewed by the Chief Security Officer by this date: October 1, 2019.

Compliance:

Non-compliance may result in escalation to the Department Director and as a result, parties may be subject to formal reprimands and other progressive disciplinary actions as prescribed in Dade County Personnel Rules and [Administrative Order 7-3](): Disciplinary Action.

# Appendix D
# Draft Form of Agreement

Miami-Dade Water and Sewer Advance Metering Infrastructure Solution
Contract No. RFP-XXXX

DRAFT TO BE PROVIDED WITH THE ADVERTISEMENT AND WILL BE NEGOTIATED WITH THE PROPOSER