Master Address Repository (MAR) Presentation

Office of the Chief Technology Officer

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What is the Master Address Repository (MAR)?

Comprehensive Location Search for the Washington, DC (DC)

- Intelligent search functionality to find addresses, place names, blocks and intersections

The MAR is Standards

- An official syntax for addresses and address components.

The MAR is Data

- A comprehensive point address database for DC. 146,500, valid addresses assembled and researched from more than 20 Address Databases with 230,300 residential units directly associated with these primary address points.
- Front elevation photographs of most taxable structures.
- Locations for each intersections, blocks, property squares.
- Alias records that contains relate to government offices, memorials, museums, landmarks, statues, hospitals, schools, police stations, fire stations, hotels, and other prominent locations.

The MAR is comprised of Applications and Web Services

- Web services that can be embedded into other applications.
- A Web site.
- A stand alone batch geocoder.
- Tools within ArcGIS–DC GIS Toolbar (Geocoder, Location Search)

Purpose and Importance of the MAR

- Create a repository that is real time and contains 100% of all valid DC addresses, intersections, blocks, and significant place names.
- Create an enterprise system that is capable of allowing ALL DC government agencies to verifying addresses for their business purposes.
- Create an enterprise application tool that is capable of cleaning address data and purging incorrect address data.
- The MAR has established a unified addressing standard. It allows DC Agencies to easily compare information about an address, block or intersection across their respective databases to the MAR.
- Addressing standards are built into the MAR application.
- It has tools (DCGIS Toolbar) that allow for geocoding and information retrieval regarding addresses, intersections and blocks that enforce the standards.
- Enables easy reporting of administrative boundaries and political boundaries.

Current Status of the MAR (May 2017)

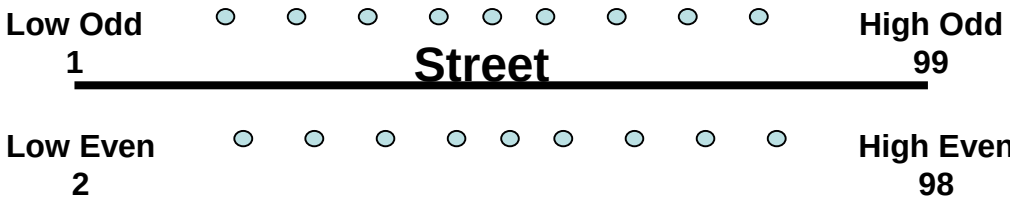
Before the establishment of the MAR, the format and quality of address information varied considerably across the differing DC government databases, making it nearly impossible to identify all of the activity, such as building permits or police reports, associated with a given address. Now, addressing standards are built into the MAR. These standards define the valid components of DC addresses (Address Number, Street Name, Street Type, Quadrant), including their correct formatting and spelling. This allows DCs government agencies to more easily compare address information across all databases.

- **TOTAL ADDRESSES POINTS**: 146,500
- **RESIDENTIAL UNITS:** 230,300
- **ALIASES (PLACE NAMES)** 8,100
- **BLOCKS:** 16,200
- **INTERSECTIONS**: 18,600
- **STREET NAME ALIASES** 1,000

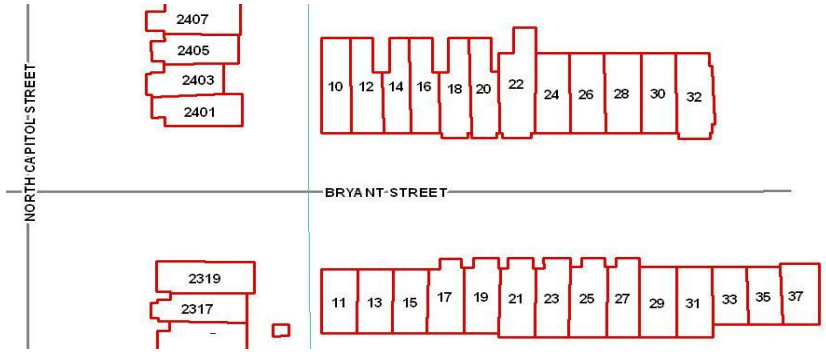
Why use the MAR?

- Point Geocoding
  - More flexible
  - More spatially accurate
- Allows for spatial overlays
- Easy admin reporting
- Street Name Aliases
- Military Areas/University Campuses
- Verify and Validate
- Residential Units
- Place Names (Aliases)
- Scrubbing Addresses
- Linkage to SSL (DC's Parcel Identification Numbering system)

Street Centerline Geocoding



Point Geocoding



MAR Database Design

- The MAR is stored in Oracle Enterprise Edition, 10.2
- It is a relational database with over 20 tables.
- It is linked with DC Department of Transportation's Street Spatial Database (SSD).

Address Attributes

- Unique Address Identification Number (AID)
- Street Number: example 1225
- Street Name: example New York
- Street Type: example Avenue
- Quadrant: example NW
- Full Address: example 1225 New York Avenue NW
- Roadwaysegment: example 3633
- X Coordinates (Projected Coordinate System: Maryland State Plane, Linear Unit: Meters): 393840.52
- Y Coordinates (Projected Coordinate System: Maryland State Plane, Linear Unit: Meters): 137607.99
- Ward: example Ward 8
- ANC: example ANC 4C
- Property square: example 0819
- Zip code: example 20016
- Voting Precinct: example Precinct 46

Database Matching & Sourcing

1.) Acquired source databases that contain Address information within the District

- Voter Rolls
- Office of Tax & Revenue
- E911 Calls
- Building Permits
- Driver Licenses
- Basic Business Licenses
- Utilities
- Others

2.) Cleanup & Format addresses to match MAR

3.) Addresses that do NOT match are separated

4.) Research unmatched addresses to determine validity

5.) Add validated addresses to the MAR

Checking Individual Addresses

Additional sources being used for address verification:

- United States Postal Service (USPS) Data
- Ortho Imagery
- Pictometry Imagery
- Street Centerlines
- Existing Addresses
- Internet Search
- Field Research
- Google Street View

MAR Maintenance & Responsibility

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- MAR Database maintenance and updates
- MAR Web Service Tool
- Address Field Verification Research
- Research MAR address submissions from DC residents
- Research Special Address Cases
- Maintain and update Addresses, Address Anomalies, Residential Units, Aliases, Street Name Aliases, Blocks, and Intersections

DCRA

- Assigning New Addresses

DDOT

- Street Centerline File
- Street Names
- Roadwaysegment ID

MAR Data

Addresses

Description: A table which stores primary addresses. Residential Units (apartment numbers) are stored in an associated table.

Number of Records: **146,500**

Examples:

- 441 4TH STREET NW
- 2500 Q STREET NW
- 4510 EAST CAPITOL STREET NE
- 50 IRVING STREET NW

Address Anomalies

Description: Address anomalies are ILLOGICAL addresses which do NOT fit logically into DC address grid system. However, these address anomalies are significant because they have been adopted (i.e. grandfathered in) and accounted for in the MAR. The following types of anomalies were found while working on the MAR:

Examples of Address Anomalies:

- Out of Sequence
- Address Far from Its Associated Street Name
- No Address Pattern Along The Same Street Segment
- Even Addresses on the Odd Side of the Street
- Odd Addresses on the Even Side of the Street

The MAR Address Anomalies Report can be found on the MAR Website

Residential Units

Description: contains secondary address designations for housing units within condo and apartment buildings. These units have unit numbers such as 101, 1, A. It also contains SSL values, condo book and page numbers. Most of these residential units have an interior entrance to the location

Number of Records: 230,300

Examples:

- 1 JOHN STREET NW 101 *
- 21 JOE STREET SE 2 *
- 3110 FAKE STREET NE A *

* Note: these are fictitious residential units.

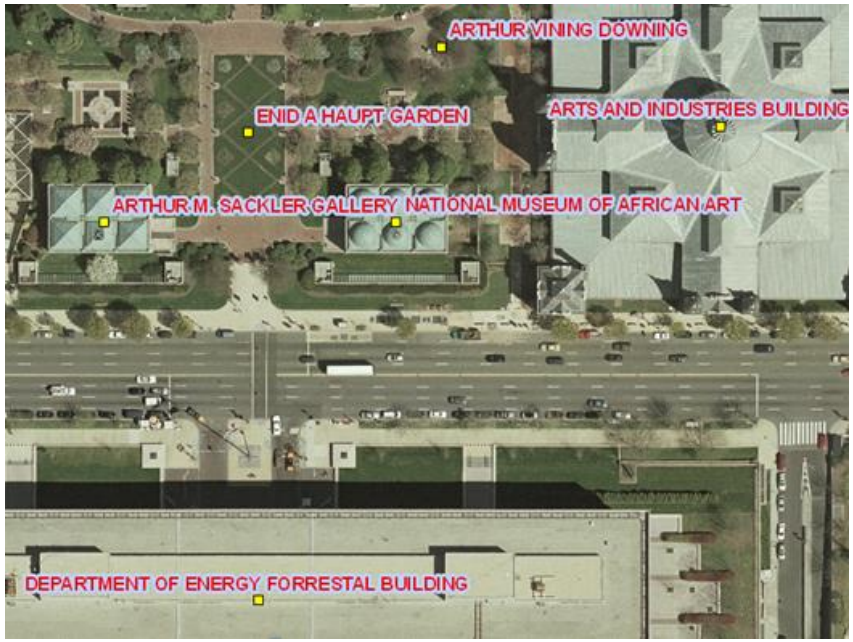
Aliases (Place Names)

Description: A table which stores place names. Examples include: Museums, Historical Sites, Building Numbers on Military Sites, Names of Buildings on Universities, Metro Station Entrances, Traffic Circles, Names of Condo / Apartments buildings, DC Government named buildings, Federal Buildings, Cultural Sites. Monuments & Statues. Police & Fire Stations, and Embassies.

Number of Records: **8,100**

Examples:

- WHITE HOUSE
- BUFFALO BRIDGE
- O STREET MARKET
- BUNDY SCHOOL



Street Name Aliases

Description: Contains abbreviated, misspelled and alternative names for streets.

Number of Records: 1,000

Alias Name	Street Name
GA	GEORGIA
MLK	MARTIN LUTHER KING JR
ILL	ILLINOIS
WISC	WISCONSIN
CONECTICUT	CONNECTICUT
ALA	ALABAMA
MISS	MISSISSIPPI

Blocks

Description: A block represents a street segment which usually has two bordering streets. The coordinates for the blocks are located at the midpoint of the street segment. Typically, each block is assigned 100 numbers, such that the address numbers on that block vary only in the two least significant digits. For example, 7th Street NW From D Street NW To E Street NW is designated as the 400 Block of 7th Street NW, meaning that street numbers on that Block are in the range from 400 to 499. On street signs in DC the block numbers are visible below the street names.

Number of Records: 16,200

Examples:

- 2500 – 2599 BLOCK OF QUEEN ANNES LANE NW
- 100 – 199 BLOCK OF 3RD STREET NE
- 4200 - 4299 BLOCK OF BOWEN ROAD SE
- 1344 – 1399 BLOCK OF SOUTHERN AVENUE SE

Intersections

Description: An Intersection is a road junction where two or more street segments meet. In cases where streets meet alleys, this not recognized as an intersection.

Number of Records: 18,600

Examples:

- MARION STREET NW AND P STREET NW
- E STREET NW AND 4TH STREET NW
- HIGHWOOD DRIVE SE AND HIGHWOOD PLACE SE
- BENNING ROAD NE AND 45TH STREET NE

MAR / SSL Cross Reference Table

Description: A many to many table showing the complex relationship between a SSL (Property Lot) and an address. A series of spatial overlays have been automated to produce this table.

Number of Records: 244,400

Example:

MARDBA.VW_ADDRESS_SSL_XREF

SSL	ADDRESS_ID	SQUARE	SUFFIX	LOT	COL	PARCEL	RESERVATION	LOT_TYPE
5397 0062	28061	5397	<Null>	0062	Y	<Null>	<Null>	RECORD LOT
2740 0017	256312	2740	<Null>	0017	Y	<Null>	<Null>	RECORD LOT
2741 0036	256327	2741	<Null>	0036	Y	<Null>	<Null>	RECORD LOT
5398E 0052	22970	5398	E	0052	Y	<Null>	<Null>	RECORD LOT
5390 0070	23114	5390	<Null>	0070	Y	<Null>	<Null>	RECORD LOT
0836 0074	28137	0836	<Null>	0074	Y	<Null>	<Null>	RECORD LOT
3761 0808	28158	3761	<Null>	0808	Y	<Null>	<Null>	TAX LOT

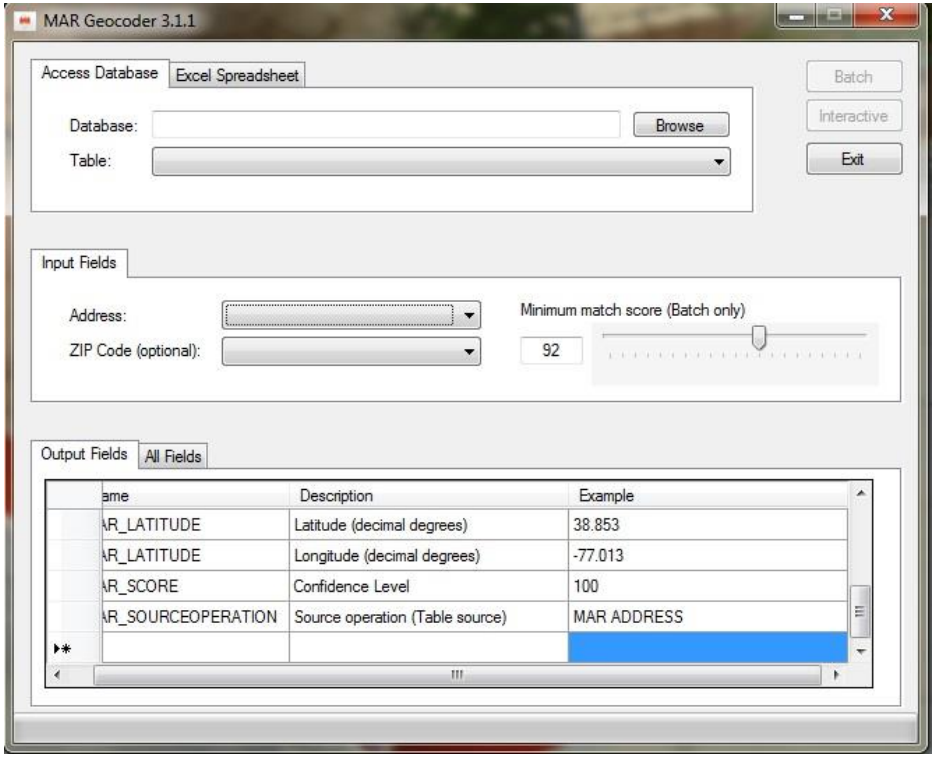
MAR Web Services

- MAR Web Services - a large number of XML based queries including (.NET and SOAP)
  - Find Address (corrects misspellings, formatting issue)
  - Find Block
  - Find Intersection
  - Find Place Name
  - Find Property
  - Find Condo Unit

- **Examples of Applications using the MAR Web Service**
  - DC GIS MAR Location Search
  - DC Business Incentives Map
  - DC Public School Boundary Information System
  - DC Property Quest
  - DC 311 CRM
  - DC 911 System

MAR Batch Geocoder

- It works by sending requests to the MAR Web Services
- Stand alone Application - Built in NET C#
- Compatible with Excel or MS Access
- Provides various DC geographies such as
  - Police District
  - Ward
  - Census Tract
  - Zipcode
  - Advisory Neighborhood Commission (ANC)
  - Single Member District (SMD)
  - Assessment Neighborhood



Contact Information

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