NM911 GIS Monthly Data Upload Assessment Report

City of Santa Fe – February, 2024

The Earth Data Analysis Center (EDAC) at the University of New Mexico (UNM) performs data acquisition and processing for the New Mexico 911 (NM911) Program. With efforts from Geodata Providers, EDAC acquires geospatial data for Road Centerlines, Address Points, and Boundary data such as Administrative, ESN, PSAP, ESZ, and so on from the data providers for their respective jurisdiction (city, county, or tribal). These data are processed and converted to NM911 State Schema, which are uploaded to the Public Safety Answering Points (PSAP) to assist dispatch operations. If data are available, EDAC provides a monthly assessment report as an outcome, listing the number of features analyzed, processed, and inaccuracies or discrepancies found in the dataset, to assist the data providers to improve the quality of the geospatial data.

The New Mexico Geodata Providers are required to upload their monthly data to the NM911 Program via NM911 data portal (https://portal.nm911.org) by the 15th of each month. EDAC will perform necessary QA processes/procedures for data verification and validation to prepare data for further processing to create a master state database. The monthly data assessment report will be made available for data providers via the NM911 Data Portal. Data that were uploaded after 15th of each month will not be processed until the next month.

Data Upload Summary

The following table shows the datasets provided by City of Santa Fe, date uploaded, total number of features uploaded.

Feature Class	Date Uploaded	Record Count
AddressPoints.shp	02/01/2024	52,597
RoadCenterlineCity.shp	02/01/2024	9,567

Road Centerlines

Schema Mapping Summary: The table below shows the schema mapping (crosswalk) between road centerline data submitted by the data provider and the NM911 state schema. Please note that if you change your schema, EDAC will automatically adjust the crosswalk/ mapping to conform with your data.

State Schema	Local Schema
SEGMENT_ID	Unknown
L_ADD_LOW	FROMLEFT
L_ADD_HIGH	TOLEFT
R_ADD_LOW	FROMRIGHT
R_ADD_HIGH	TORIGHT
STR_DIR	RCLPFIX
STR_PRETYPE	Unknown
STR_NAME	RCLNAME

STR_SUFFIX	RCLSFIX
POST_DIR	RCLSFIXDIR
STR_ALIAS	RCLALIAS1
COMNAME_L	Unknown
COMNAME_R	Unknown
MSAG_COM_L	LEFT_MSAG
MSAG_COM_R	RIGHT_MSAG
COUNTY_L	Unknown
COUNTY_R	Unknown
ZIPCODE_L	Unknown
ZIPCODE_R	Unknown
ESN_L	LEFT_ESN
ESN_R	RIGHT_ESN
STR_NAME_1	Unknown
ROAD_LABEL	STREET
RD_CLASS	RCLCLASS
ONE_WAY	ONE_WAY
SPEED	SPEEDLIMIT
F_ELEV	Unknown
T_ELEV	Unknown
EXCEPTION	C1_EXCEPT
DPID	Unknown
NO_MSAG	NO_MSAG

Road Centerline Data Import Errors

The total number of errors found:174
Please see SFSFC_202402.gdb/NM911_ERRORS/Road_Centerline_Import_Errors
The following table show import errors by type:

Import Errors	Count
Street Direction must be Null, empty string, or one of E,W,N,S,NE,NW,SE,SW	2
Streetname cannot be Null or whitespace.	172

Please note the data in the import error featureclass will not be included in the state master
database until they are corrected by the geodata providers.

Assessment Results: The following are the various checks performed on road centerline data
to ensure data accuracy and integrity.

Error Check Type	Number of Errors
Road Centerline Left Low Address Must Be Odd	4022
Road Centerline Left High Address Must Be Odd	4015
Road Centerline Right Low Address Must Be Even	4103
Road Centerline Right High Address Must Be Even	4097
Road Centerline Left Low Address Is Greater Than Left High Address	244
Road Centerline Right Low Address Is Greater Than Right High Address	308
Road Centerline Must Be Broken And Snapped At Road Intersections	122
Road Centerline Must Not Have Right Side Overlapping Address Range	32
Road Centerline Must Not Have Left Side Overlapping Address Range	23
Road Centerline Has Invalid Geometry	3
Road Centerline Should Not Be Multipart	1
Road Centerline Length Must Not Be Less than 15 ft	5
Road Centerline Must Not Have Duplicate Geometry	2
NM911 Topology Checks	3952
Road Centerline Must Not Have Dangles	84

Instruction: Please note that some of these errors are interlinked i.e. correcton in any of the error check types will effect other check types; also road centerline error correction may lead to error correction in address points and vice versa. If any of these discrepancies are acceptable, note as an expection in CI_Exception/C1_Exception/Exception column in your GIS data. The NM911 Program will consider these codes as exceptions and will not error check these data records. Once we have these execeptions recorded, your error totals will likely be greatly reduced.

CI_Exception/C1_Exception/Exception:

- If using MapSAG: It assigns an exception code.
- If not using MapSAG: Please mark "Y" or "1" if there is an exception and leave the column blank if no exception.

Please refer to Frequently Asked Questions (FAQ) section on the NM911 Data Portal or NM911 Website for error check types where exceptions are valid.

Address Points

Schema Mapping Summary: The table below shows the schema mapping between address point data submitted by the data provider and the NM911 state schema.

State Schema	Local Schema
STRUCT_ID	Unknown
ADD_NUMBER	ADDRESS_NO
ADD_SUFFIX	UNIT
STR_DIR	PREFIX
STR_PRETYPE	Unknown
STR_NAME	ROAD_NAME
STR_SUFFIX	SUFFIX
POST_DIR	POSTDIR
STR_NAME_1	Unknown
MSAG_COM	Unknown
COMNAME	Unknown
STR_ALIAS	Unknown
ESN	Unknown
ZIPCODE	ZIP_CODE
DPID	Unknown
EXCEPTION	C1_EXCEPTI
ROAD_LABEL	Unknown

Address Points Data Import Errors

The total number of errors found:46
Please see SFSFC_202402.gdb/NM911_ERRORS/Address_Point_Import_Errors
The following table show import errors by type:

Import Errors	Count
Post Direction must be Null, empty string, or one of E,W,N,S,NE,NW,SE,SW	10
Streetname cannot be Null or whitespace.	1
The row contains a bad value in SUFFIX column.	35

Please note the data in the import error featureclass will not be included in the state master database until they are corrected by the geodata providers.

Assessment Results: The following are the various checks performed on address point data to ensure data accuracy and integrity.

Error Check Type	Number of Errors
Address Point Address Number Cannot Be 0, Negative, NULL Or Blank	7
Address Point Street Name Cannot Be Blank Or NULL	0
Address Point Full Road Name Must Match Road Centerline Full Road Name	734
Address Point Address Number Should Be Within Road Centerline Address Range	2315
Address Point Has Invalid Geometry	0
Address Point Must Not Have Duplicate Geometry	90
NM911 Topology Checks	12

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Fishbone Analysis

The Fishbone Analysis will assist NM911 Geodata Providers to improve the quality and accuract of their data.

Analysis: Fishbone map lines represent a straight-line comparison of two points; address point locations and their geocoded locations (geocoded using the road centerline data provided by the geodata providers). Fishbone analysis will provide a visual representation of the source and the destination point's placement within road centerline address ranges. This offers an additional opportunity to the geodata providers to QA their data to improve the quality and integrity. Starting April 2019, EDAC is generating fishbone lines to assist geodata providers with their data correction process.

Interpretation: Fishbone line intersections represent a series of addresses within a range that match the attributes on a centerline, but the arc directionality is modeled against the standard convention. This may have caused by centerline arcs that were digitized opposite to the actual address point ranges or incorrect address ranges. If fishbone lines intersects with road centerlines, then address range sides may have incorrect parity or the address points that were not able to geocode.

Error Detection: The shape_length field in the fishbone feature class can be used to identify other errors. If the fishbone line segments appear longer than acceptable, it may have been a result of inaccurate data or an issue with the geocoding locator which matched a point to an incorrect road segment. See image below for more information.

Example: Fishbone Lines - Correct (Left); Fishbone Lines - Error, due to incorrect street address range (Right)
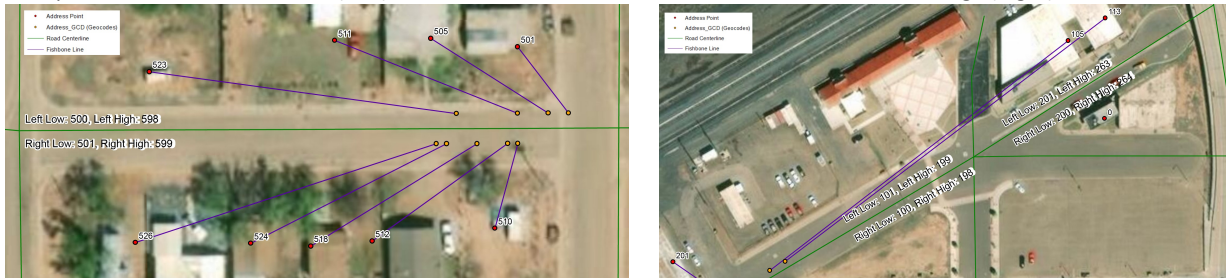
Starting April 2019, the NM911 Program is generating fishbone lines to assist geodata providers with their data correction. The fishbone lines are created only if data uploaded by the geodata providers contain street address columns and additional columns such as postal community (Roads: COMNAME_L, COMNAME_R; Addresses: COMNAME) and zip code (Roads: ZIPCODE_L, ZIPCODE_R; Addresses: ZIPCODE).

Geodatabase Contents

The accompanying zip file contains a file geodatabase with data provided by the local agency that was imported into the state schema. Also included are the results of data integrity checks run by EDAC. These results can assist local agency to improve data quality.

Source Geodatabase: SFSFC_202402.gdb
NM911 Feature Dataset: Contains following feature classes

- AddressPoints – Data provided by the local agency, imported into State Schema
- AdministrativeBoundary – Boundary of local agency jurisdiction. Ex: County, City/Town, Village, and Tribe
- ESZ – Emergency Service Zone/Emergency Service Number boundary of local agency, if available.
- NM911_Topology – Topology Errors found in the data provided by the local agency.
- PSAP – Public Safety Answering Point (PSAP) boundary in which local agency is located, if available
- RoadCenterline – Data provided by the local agency, imported into State Schema

NM911_ERRORS Feature Dataset: Contains error/discrepancy data after data validation

- Address_Point_Import_Errors – Data provided by the local agency that were not imported into State Schema due to error/mismatch. More detailed explanation can be found under ERROR column inside the attribute table. The table also includes ORIGINAL FID to identify records in data provided by local agency.
- Road_Centerline_Import_Errors – Data provided by the local agency that were not imported into State Schema due to error/mismatch. More detailed explanation can be found under ERROR column inside the attribute table. The table also includes ORIGINAL FID to identify records in data provided by local agency.

- Other Error feature classes – These are categorized by the error check type. The name of the feature class defines the error type. They vary from provider depending on the data quality.

Fishbone_Analysis Feature Dataset: Contains following feature classes

- Address_GCD – Geocoded address point data using the road centerlines as the reference dataset. Address points that contain valid address number and street name are used for geocoding.
- Fishbone_Lines – Lines created between actual address point location (AddressPoints) from the geodata provider and the corresponding geocoded point location (Address_GCD).

Contact Information

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