Migrating Database Elements to New NG911 Data Model

The biggest change in the NENA NG911 GIS Data model is how street names are handled. Both road centerlines and site structure address points now contain two versions of the street names: the traditional legacy street names with four fields and the Civic Location Data Exchange Format (CLDXF) street name format which is made up of eight fields. The following information provides options for transitioning to the new NG911 GIS Data Model.

1. DTMB recommends converting to the new geodatabase model, if possible, to make uploading data to the repository easier for aligning fields and leveraging all validation checks, but it is strongly encouraged that you keep your legacy fields in addition to the new CLDXF fields

A geodatabase template for the NENA NG911 GIS Data Model can be found on the project websitehttps://www.michigan.gov/dtmb/services/maps/michigan-statewide-ng911-gis-repository

2. If you cannot adopt the complete new NG911 GIS Data model geodatabase, then, at minimum, have the CLDXF street name fields and the legacy street name fields. The CLDXF street name elements are the eight fields that begin with Street Name in the tables below. More information on National Emergency Number Association (NENA) NG911 GIS Data Model can be found at NENA 01-002 . The required street name fields for address points and road centerlines are listed below.

Address Points

Field Description	File Geodatabase Field Names	Shapefile Field Names	Field Type	Field Length
Address Number Prefix	Address_Number_Prefix	AddNum_Pre	A	15
Address Number	Address_Number	Add_Number	N	6
Address Number Suffix	Address_Number_Suffix	AddNum_Suf	A	15
Street Name Pre Modifier	Street_Name_Pre_Modifier	St_PreMod	A	15
Street Name Pre Directional	Street_Name_Pre_Directional	St_PreDir	A	9
Street Name Pre Type	Street_Name_Pre_Type	St_PreTyp	A	50
Street Name Pre Type Separator	Street_Name_Pre_Type_Separator	St_PreSep	A	20
Street Name	Street_Name	St_Name	A	254
Street Name Post Type	Street_Name_Post_Type	St_PosTyp	A	50
Street Name Post Directional	Street_Name_Post_Directional	St_PosDir	A	9
Street Name Post Modifier	Street_Name_Post_Modifier	St_PosMod	A	25
Legacy Street Name Pre Directional	Legacy_Street_Name_Pre_Directional	LSt_PreDir	A	2
Legacy Street Name	Legacy_Street_Name	LSt_Name	A	75
Legacy Street Name Type	Legacy_Street_Name_Type	LSt_Typ	A	4
Legacy Street Name Post Directional	Legacy_Street_Name_Post_Directional	LSt_PosDir	A	2

Figure 1 – NG911 GIS data model address point street name fields

Road Centerlines

Field Description	File Geodatabase Field Names	Shapefile Field Names	Field Type	Field Length
Street Name Pre Modifier	Street_Name_Pre_Modifier	St_PreMod	A	15
Street Name Pre Directional	Street_Name_Pre_Directional	St_PreDir	A	9
Street Name Pre Type	Street_Name_Pre_Type	St_PreTyp	A	50
Street Name Pre Type Separator	Street_Name_Pre_Type_Separator	St_PreSep	A	20
Street Name	Street_Name	St_Name	A	254
Street Name Post Type	Street_Name_Post_Type	St_PosTyp	A	50
Street Name Post Directional	Street_Name_Post_Directional	St_PosDir	A	9
Street Name Post Modifier	Street_Name_Post_Modifier	St_PosMod	A	25
Legacy Street Name Pre Directional	Legacy_Street_Name_Pre_Directional	LSt_PreDir	A	2
Legacy Street Name	Legacy_Street_Name	LSt_Name	A	75
Legacy Street Name Type	Legacy_Street_Name_Type	LSt_Typ	A	4
Legacy Street Name Post Directional	Legacy_Street_Name_Post_Directional	LSt_PosDir	A	2
Left From Address	Left_From_Address	FromAddr_L	N	6
Left To Address	Left_To_Address	ToAddr_L	N	6
Right From Address	Right_From_Address	FromAddr_R	N	6
Right To Address	Right_To_Address	ToAddr_R	N	6

Figure 2 – NG911 GIS data model road centerline street name fields

The following images show examples of how to format your data in the Legacy fields and the CLDXF fields. The Legacy fields will continue to maintain addresses as they have been formatted for the past few decades. The CLDXF fields require the pre-directional, post-directional and post-type to be spelled out with first letter capitalized and the rest of the letters in the word lower case. Depending on what is in the Legacy Street name field, you may need to separate the elements out in CLDXF format using modifier fields. For now, you can just leave the street name field as is for the first upload, and then work on any street name parsing over the weeks to come. More information about parsing the street names into the CLDXF format can be found at [NENA Next Generation 9-1-1 (NG9-1-1) United States Civic Location Data Exchange Format (CLDXF) Standard]

Address Number Prefix	<null>
Address Number	262
Address Number Suffix	<null>
Street Name Pre Modifier	<null>
Street Name Pre Directional	South
Street Name Pre Type	<null>
Street Name Pre Type Separator	<null>
Street Name	Imperial
Street Name Post Type	Drive
Street Name Post Directional	<null>
Street Name Post Modifier	<null>
Legacy Street Name Pre Directional	S
Legacy Street Name	IMPERIAL
Legacy Street Name Type	DR
Legacy Street Name Post Directional	<null>

Figure 3 – Example of address point street name format showing CLDXF field value formats

Address Number Prefix	<null>
Address Number	1684
Address Number Suffix	
Street Name Pre Modifier	<null>
Street Name Pre Directional	North
Street Name Pre Type	State Route
Street Name Pre Type Separator	<null>
Street Name	65
Street Name Post Type	<null>
Street Name Post Directional	<null>
Street Name Post Modifier	<null>
Legacy Street Name Pre Directional	N
Legacy Street Name	M65
Legacy Street Name Type	<null>
Legacy Street Name Post Directional	<null>

Figure 4 – Example of address point street name format with CLDXF pre type

Address Number Prefix	
Address Number	2770
Address Number Suffix	
Street Name Pre Modifier	Old
Street Name Pre Directional	
Street Name Pre Type	
Street Name Pre Type Separator	
Street Name	Shore
Street Name Post Type	Road
Street Name Post Directional	
Street Name Post Modifier	
Legacy Street Name Pre Directional	
Legacy Street Name	OLD SHORE
Legacy Street Name Type	RD
Legacy Street Name Post Directional	

Figure 5 – Example of address point street name format with modifier

3. If you can't add the CLDXF fields in time for the first upload, then just map your existing legacy street name fields to the legacy street names fields in the repository. You can then include the CLDXF fields in the next upload. Any changes will be detected by the system.

The other keys fields to have in your data set for initial upload are the following:

Field	Value
OBJECTID	651087
Shape	Point
Discrepancy Agency ID	sanilaccounty.net
Date Updated	<null>
Effective Date	<null>
Expiration Date	<null>
Site NENA Glocally Unique ID	SSAP_19049@sanilaccounty.net
Country	US
State	MI
County	Sanilac County
Additional Code	2022-0
Incorporated Municipality	FREMONT TOWNSHIP
Unincorporated Municipality	<null>
Neighborhood Community	<null>
Address Number Prefix	<null>
Address Number	1320
Address Number Suffix	<null>
Street Name Pre Modifier	<null>
Street Name Pre Directional	<null>
Street Name Pre Type	<null>
Street Name Pre Type Separator	<null>
Street Name	Mortimer Line
Street Name Post Type	Road
Street Name Post Directional	<null>
Street Name Post Modifier	<null>
Legacy Street Name Pre Directional	<null>
Legacy Street Name	MORTIMER LINE
Legacy Street Name Type	RD
Legacy Street Name Post Directional	<null>
ESN	<null>
MSAG Community Name	<null>
Postal Community Name	<null>
Post_Code	<null>
ZIP Plus 4	<null>
Building	<null>
Floor	<null>
Unit Type	<null>
Unit	<null>

The discrepancy agency ID needs to have a value that identifies the agency that is maintaining the data. This should be the domain such as sanilaccounty.net as outlined in Figure 6. Another key field is the NENA Globally Unique ID for each feature (road centerline or address point).Figure 6 shows a common structure for the ID using SSAP (for a site structure address point) along with the existing unique numeric ID and then adding the '@' along with the discrepancy agency ID: SSAP_19049@sanilaccounty.net. For road centerlines, you can use RCL rather than SSAP. For example, RCL_12345@sanilaccounty.net.

The other key fields are Country, State and County. You can see the formatting for these in Figure 6. Notice that the County name includes the word "County" all spelled out as this is a case sensitive field. The same format applies for the Incorporated Municipality field. Township needs to bespelled out and City needs to come either before or after the name (e.g. City of Lansing).

Figure 6 - Example of the additional required fields for initial data uploads

Field	Value
OBJECTID	908543
Shape	Point
Discrepancy Agency ID	Macombgov.org
Date Updated	<null>
Effective Date	9/12/2022 8:00:00 PM
Expiration Date	<null>
Site NENA Glocally Unique ID	SSAP:9851847:Macombgov.org
Country	US
State	MI
County	Macomb County
Additional Code	2022-0
Incorporated Municipality	Clinton Township
Unincorporated Municipality	<null>
Neighborhood Community	Fern Hill Manor Condominium
Address Number Prefix	<null>
Address Number	17140
Address Number Suffix	<null>
Street Name Pre Modifier	<null>
Street Name Pre Directional	<null>
Street Name Pre Type	<null>
Street Name Pre Type Separator	<null>
Street Name	Clinton River
Street Name Post Type	Road
Street Name Post Directional	<null>
Street Name Post Modifier	<null>
Legacy Street Name Pre Directional	<null>
Legacy Street Name	CLINTON RIVER
Legacy Street Name Type	RD
Legacy Street Name Post Directional	<null>
ESN	414
MSAG Community Name	Clinton Township
Postal Community Name	Clinton Township
Post_Code	48038
ZIP Plus 4	<null>
Building	<null>
Floor	<null>
Unit Type	C
Unit	21C

In Figure 7, shows some additional optional fields that have been given values. In this example, the Neighborhood Community field -is set with the value fora condominium complex. A subdivision name or other community name could also be used.

Figure 7 also shows how the ESN, MSAG Community Name, Postal Community Name, and Post Code are all fully populated. Having these fields populated will help with future MSAG/ALI and GIS validations. However, these fields are optional.

Figure 7 – Another example of NG911 GIS Data Model fields values