Understand Exposure | Tips for Collecting Spatial Data

WHO

This provides additional guidance for collecting data for the practitioner in the Understand Exposure step.

WHAT

This is a guidance document that can be used to help collect spatial data and fill in 2.8 Spatial Data Collection - Worksheet.

SUPPORTING RESOURCES

- Community asset themes delineated in 2.3 Community Asset Themes - Worksheet
- Impact pairs from 2.6 Potential Impacts Matrix - Worksheet
- Spatial data source suggestions in 2.7 Sources for Spatial Data - Guidance
- Spatial data Collection Sheet to be filled in 2.8 Spatial Data Collection - Worksheet

INSTRUCTIONS

- ☐ Review the above resources as needed.
- ☐ Using the guidance below, begin to fill in each section of 2.8 Spatial Data Collection - Worksheet.

What does the Spatial Data Collection Sheet contain?

2.8 Spatial Data Collection - Worksheet has three main sections for recording spatial data sources, types, file locations, and specific attributes for the assessment.

Boundaries and Underlying Spatial Data	This section encompasses the study area boundary, parcel and building footprints data and relevant attributes. This data is the base of the assessment, primarily made up of cadastral type data. Typically found on local or county GIS portals, this includes parcels and use codes, building footprints, and different types of boundaries. The study area can be determined by municipal boundaries or by using census boundaries that encompass the municipal boundaries or extent of the community.
Community Assets Spatial Data	This data is sometimes parcel data but also may exist in ancillary formats - such as point or polygon, or even tabular. The themes and categories determined for the project should start to show up here with each dataset that can be used listed in that section.
Hazards Spatial Data	Data for the hazards that will be assessed for the project will be recorded here. These data may be raster or polygon and will come from various local, state, or federal sources.

Remember

- ✓ Collect the most recent spatial data available.
- ✓ Use trusted sources.
- ✓ Record every dataset that you collect, even if you are not sure if you'll use it yet (this can be cleaned up later).
- ✓ If you are having trouble finding the spatial data you need, ask the community if they have a GIS person that you can coordinate with.

Tips and Tricks for Collecting Data

All the spatial data collected for any part of the assessment should be the most up-to-date data available and should come from a trusted source. This space can also be used to keep track of supporting documents and information related to the hazards. Throughout the Spatial Data Collection sheet, use the "Status" column to indicate whether the data is desired, unavailable, not applicable, or collected. The types of data that need to be collected are described below.

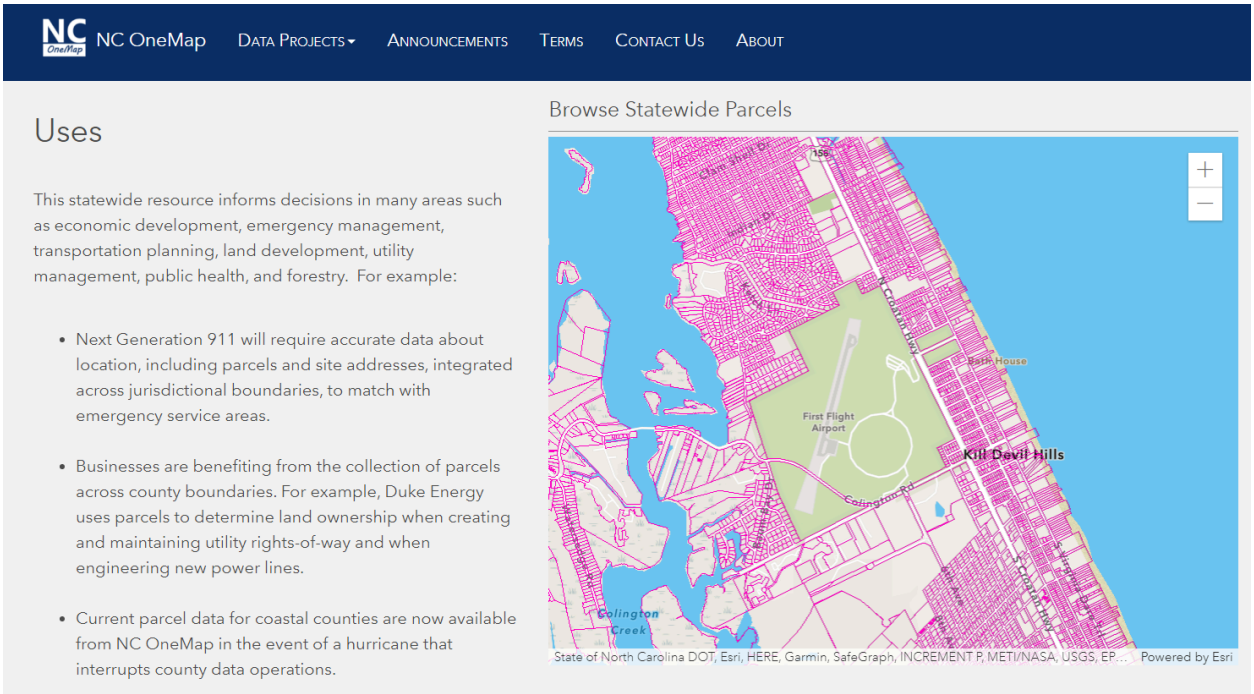
Boundaries and Underlying Spatial Data

Study area

Use municipal boundaries or census boundaries to create a study area extent. For census boundaries, determine what scale of census boundaries is most suitable for the area (census block groups or census tracts). Overlay the census boundaries with the general area boundary and select all census boundaries that intersect with it. This can then become the study area boundary.

Buildings and Property Records

Buildings and property records can serve as the foundation of a parcel-based assessment. Data that needs to be collected includes parcel data (spatial and tabular), building footprints, and various project-related boundaries. This type of data and information, if available, can typically be found on a city, county, or state GIS portal. For example, the state of North Carolina has a statewide parcel data initiative and provides this data publicly on their [NC OneMap portal](#).



In addition to the spatial data, you'll want to look for specific attributes. These will either be found within the parcel data's attribute table or in a tabular format that can be joined to the spatial data. Attributes include:

- Parcel use codes (and their meaning, often a separate document altogether)
- Primary structure effective year built (sometimes an attribute of the building footprints)
- Parcel value

If either the building footprints or parcel data have a value for first floor elevation (or, FFE), that will be important to note if FEMA data is being used to assess flooding.

In addition, you'll collect and record spatial data for boundaries here. This will include city or town boundaries, the study area boundary (if different), and either census tract or block group boundaries. Census boundaries may be available on the same site, or you may need to download the data from the [U.S. Census Bureau's Tiger/Line](#).

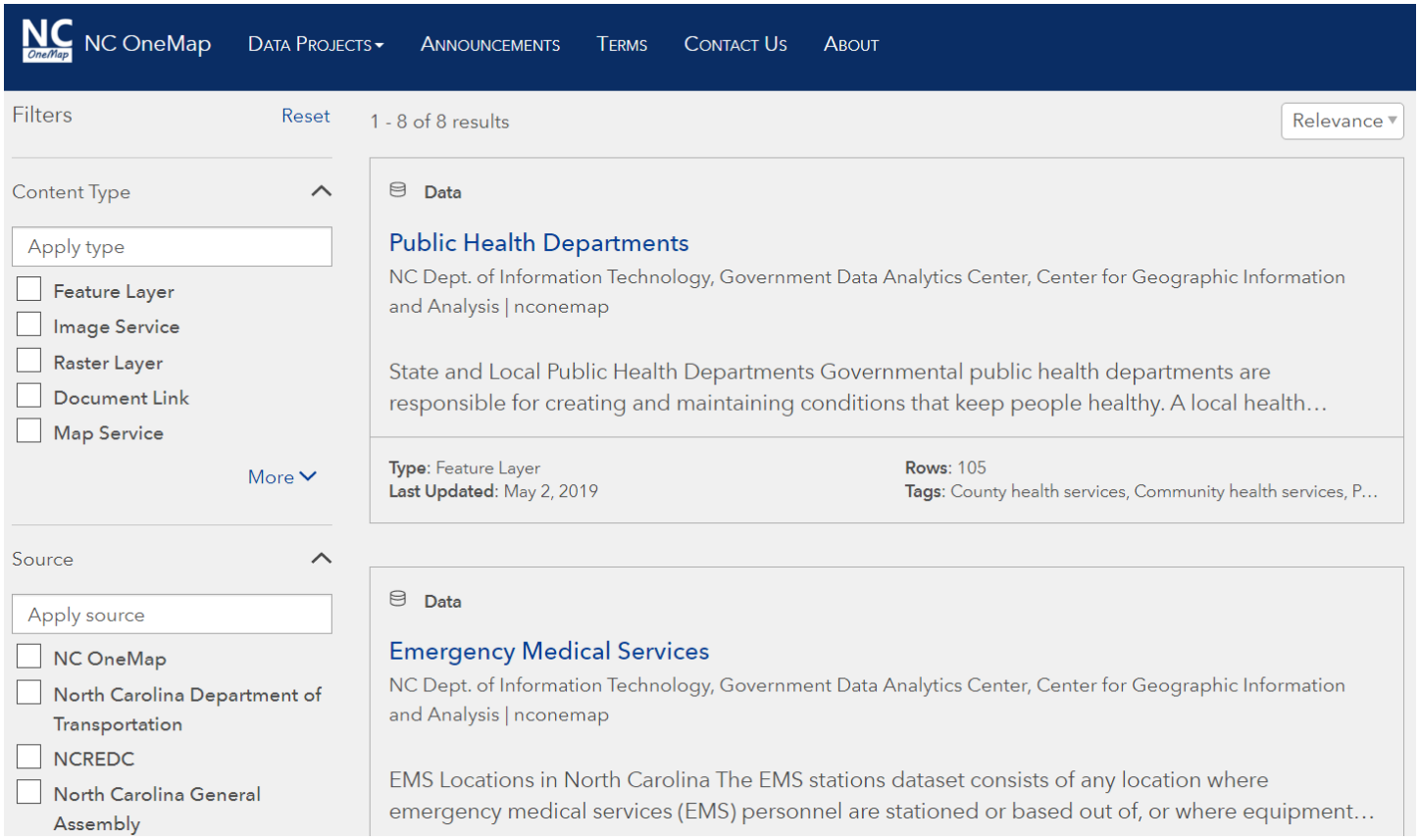
Community Assets Spatial Data

Some communities will have quite a bit of spatial data to use, while others will be lacking. The parcel data and parcel use codes will always serve as a starting point for community asset categories. Using the themes developed by the team, set up the Community Assets section of the sheet to begin recording datasets collected for each theme. The example themes within the sheet include: commercial property, residential property, government-owned property, critical facilities, and parks and cultural property. Change and or add themes and rows for types as needed. After setting up the sheet with themes and categories, begin entering the relevant parcel use codes within each theme and type.

Category	Desired Attributes	Description	Status (desired, not applicable, unavailable, collected)	File Name	Data Source & Year (link or org/agency name)	Actual Field Name for Desired Attributes	Collected By
COMMERCIAL PROPERTY: all retail, office, restaurant, hotel, industrial, and other properties that serve businesses and organizations.							
Restaurants	375; 380;	eateries	collected	parcel.shp	NC OneMap, 2020	USE	Kim R.

Note that in this example there are two parcel use codes that fit the description “restaurants,” so both are listed with a semicolon separating them.

After all the parcel use codes are entered in the sheet, look for any additional data for the community. Sometimes communities will collect location data for specific types of facilities or buildings and maintain that data separately from parcel data. For example, the state of North Carolina’s NC OneMap portal provides several standalone statewide datasets for various types of facilities.



Enter the data on a new line within the sheet, below the parcel data for the same property type.

Category	Desired Attributes	Description	Status (desired, not applicable, unavailable, collected)	File Name	Data Source & Year (link or org/agency name)	Actual Field Name for Desired Attributes	Collected By
CRITICAL FACILTIES: fire and police stations that aid in emergency response, medical facilities, schools, energy and utility facilities, and transportation-related facilities.							
Police stations	107;	law enforcement	collected	parcels.shp	NC OneMap, 2020	USE	Kim R.
Hospitals	205;	medical facilities	collected	parcels.shp	NC OneMap, 2020	USE	Kim R.
Medical Facilities	all points;	hospitals and urgent care facilities	collected	NConemap_medical.shp	NC OneMap, 2020		Kim R.

Since “Medical Facilities” is a standalone dataset and doesn’t need to be filtered by attribute, “all points” can be listed for desired attributes.

It can be easy to quickly lose track of asset data. Remember to record everything you collect and the source, even if you’re not sure you’ll use it. You can clean the sheet up later.

Hazards Spatial Data

Update the hazards section of the sheet according to which hazards are going to be assessed for the community. If there are multiple datasets that represent a single hazard, remember to list them all together. In this example, the 100-year and 500-year floodplains from the FEMA data are going to be assessed separately.

Hazard	Desired Attributes	Description	Status (desired, not applicable, unavailable, collected)	File Name	Data Source & Year (link or org/agency name)	Actual Field Name for Desired Attributes	Collected By	Notes
Floodplain Inundation	FLD_ZONE = 'AE' OR 'VE'	100-yr	Collected	FEMA NFHL, 37129C: S_FLD_HAZ_AR.shp		FLD_ZONE		
	FLD_ZONE = 'X' AND ZONE_SUBTY = '0.2 PCT ANNUAL CHANCE FLOOD HAZARD'	500-yr			FEMA; yr00	FLD_ZONE; ZONE_SUBTY	Kim	

Filling in all the required information for hazards may take some extra research and understanding. Make a note of any sources of information that were used to help this process, either in the notes column or somewhere else. This can be a helpful reference later on.