

An ArcGIS® Census Data Model

This diagram illustrates a geodatabase data model that can be leveraged by census organizations across the globe. A key feature of this design is the creation and maintenance of topologically nested polygon feature classes from line feature classes containing common boundaries. Census organizations can easily modify the design to reflect the nested feature classes that are pertinent to their country. Also, specific census demographic information can be readily added.

Census Feature Dataset

Province - Feature Class

District - Feature Class

Municipality - Feature Class

Enumeration_Area - Feature Class

GeoLocation - Feature Class

Electoral_District - Feature Class

Census_Topology - Topology

Stand-Alone Feature Classes

Facility - Feature Class

Landform - Feature Class

Railroad - Feature Class

Road - Feature Class

Site - Feature Class

Waterbody - Feature Class

Waterline - Feature Class

Shape Type

 Polygon

 Point

 Line

Province - Feature Class					
Shape Type	Polygon		Alias Name	Province	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
ProvinceID	Province ID/Code	String	25	true	
ProvinceName	Province Name	String	50	true	

District - Feature Class					
Shape Type	Polygon		Alias Name	District	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
DistrictID	District ID/Code	String	25	true	
DistrictName	District Name	String	50	true	
ProvinceID	Province ID/Code	String	25	true	

Municipality - Feature Class					
Shape Type	Polygon		Alias Name	Municipality	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
MunicipalityID	Municipality ID/Code	String	25	true	
MunicipalityName	Municipality Name	String	50	true	
DistrictID	District ID/Code	String	25	true	

Enumeration_Area - Feature Class					
Shape Type	Polygon		Alias Name	Enumeration Area	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
EnumerationAreaID	Enumeration Area ID/Code	String	25	true	
EnumerationAreaName	Enumeration Area Name	String	50	true	
MunicipalityID	Municipality ID/Code	String	25	true	

GeoLocation - Feature Class					
Shape Type	Point		Alias Name	GeoLocation	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
Latitude	Latitude	Double		true	
Longitude	Longitude	Double		true	
EnumerationAreaGlobalID	Enumeration Area Global ID	GUID		true	

Electoral_District - Feature Class					
Shape Type	Polygon		Alias Name	Electoral District	
Field	Alias	Type	Length	Nullable	
GlobalID	Global ID	Global ID		false	
ElectoralDistrictID	Electoral District ID/Code	String	25	true	
ElectoralDistrictName	Electoral District Name	String	50	true	

The *Electoral_District* feature class is included in the feature dataset because electoral districts are often relevant in the context of a census. Although it is not part of the administrative division hierarchy that appears to the left, it does participate in the feature dataset's topology due to its spatial relationship with *District*.

Census_Topology - Topology		
Feature Classes		
Province		
Municipality		
GeoLocation		
Enumeration_Area		
Electoral_District		
District		
Origin Class		
District	Must Not Overlap	District
Enumeration Area	Must Not Overlap	Enumeration Area
Municipality	Must Not Overlap	Municipality
Province	Must Not Overlap	Province
Enumeration Area	Must Be Covered By	Municipality
Municipality	Must Be Covered By	District
District	Must Be Covered By	Province
Enumeration Area	Must Cover Each Other	Municipality
Municipality	Must Cover Each Other	District
District	Must Cover Each Other	Province
GeoLocation	Must Be Properly Inside	Enumeration Area
Electoral District	Must Not Overlap	Electoral District
Electoral District	Must Be Covered By	District
Electoral District	Must Cover Each Other	District

Relationship Classes					
Relationship Class	Cardinality	Origin Class	Origin Primary Key	Destination Class	Destination Foreign Key
ProvinceToDistrict	1 - M	Province	ProvinceID	District	ProvinceID
DistrictToMunicipality	1 - M	District	DistrictID	Municipality	DistrictID
MunicipalityToEnumerationArea	1 - M	Municipality	MunicipalityID	EnumerationArea	MunicipalityID
EnumerationAreaToGeoLocation	1 - M	EnumerationArea	GlobalID	GeoLocation	EnumerationAreaGlobalID

Facility - Feature Class					
Shape Type	Point		Alias Name	Facility	
Field	Alias	Type	Length	Default Value	Nullable
FacilityID	Facility ID/Code	String	25		true
FacilityName	Facility Name	String	50		true
FacilityDescription	Facility Description	String	250		true
FacilityCategory	Facility Category	Small Integer		1	true
FacilityType	Facility Type	Small Integer			true
Subtype Code					
1	Residential	ResidentialFacilityType			
2	Commercial	CommercialFacilityType			
3	Educational	EducationalFacilityType			
4	Landmark	LandmarkFacilityType			
5	Medical	MedicalFacilityType			
6	Transportation	TransportationFacilityType			

Landform - Feature Class					
Shape Type	Polygon		Alias Name	Landform	
Field	Alias	Type	Length	Domain	Nullable
LandformName	Landform Name	String	50		true
LandformType	Landform Type	Small Integer		LandformType	true

Railroad - Feature Class					
Shape Type	Line		Alias Name	Railroad	
Field	Alias	Type	Length	Domain	Nullable
RailroadID	Railroad ID/Code	String	25		true
RailroadName	Railroad Name	String	50		true
RailroadNumber	Railroad Number/Code	String	25		true
RailroadType	Railroad Type	Small Integer		RailroadType	true

Road - Feature Class					
Shape Type	Line		Alias Name	Road	
Field	Alias	Type	Length	Domain	Nullable
RoadID	Road ID/Code	String	25		true
RoadName	Road Name	String	50		true
RoadNumber	Road Number/Code	String	25		true
RoadClass	Road Class	Small Integer		RoadClass	true

Site - Feature Class					
Shape Type	Polygon		Alias Name	Site Category	
Field	Alias	Type	Length	Default Value	Nullable
SiteID	Site ID/Code	String	25		true
SiteName	Site Name	String	50		true
SiteDescription	Site Description	String	250		true
SiteCategory	Site Category	Small Integer		1	true
SiteType	Site Type	Small Integer			true
Subtype Code					
1	Residential	ResidentialFacilityType			
2	Commercial	CommercialFacilityType			
3	Educational	EducationalFacilityType			
4	Landmark	LandmarkFacilityType			
5	Medical	MedicalFacilityType			
6	Transportation	TransportationFacilityType			

Waterbody - Feature Class					
Shape Type	Polygon		Alias Name	Waterbody	
Field	Alias	Type	Length	Domain	Nullable
WaterbodyID	Waterbody ID/Code	String	25		true
WaterbodyName	Waterbody Name	String	50		true
WaterbodyType	Waterbody Type	Small Integer		WaterbodyType	true

Waterline - Feature Class					
Shape Type	Line		Alias Name	Waterline	
Field	Alias	Type	Length	Domain	Nullable
WaterlineID	Waterline ID/Code	String	25		true
WaterlineName	Waterline Name	String	50		true
WaterlineType	Waterline Type	Small Integer		WaterlineType	true