ArcLogistics Route Map Data Specification

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ArcLogistics Route Map Data Specification

ArcLogistics™ Route uses shapefiles for its street data sets and map background layers. Map data can be in geographic or projected coordinates, but all the shapefiles used with ArcLogistics Route must be in the same coordinate system. Each street data set has several shapefiles associated specifically with it, but all street data sets use a single common set of map background layers.

Shapefiles in the Street Data Set Directory

All of the shapefiles for a street data set must be located in the same directory.

AllSt

ArcLogistics Route uses AllSt to represent the entire street network. AllSt must be a topologically connected shapefile.

Shape Type

Line

Attributes

Address Fields

The fields needed for geocoding. They should be present, even if they are empty.

Field	Type	Length	Description
L_F_Add	Integer	12	Start of address range on left side of street
L_T_Add	Integer	12	End of address range on left side of street
R_F_Add	Integer	12	Start of address range on right side of street
R_T_Add	Integer	12	End of address range on right side of street
Prefix	String	2**	Prefix of street (e.g., "N")
Pre_Type	String	6**	Type of street before name (e.g., "Ave." in "Ave. A")
Name*	String	30**	Street's name (e.g., "Smith" in "Smith St.")
Type	String	6**	Type of street (e.g., "St.")
Suffix	String	2**	Suffix of street (e.g., "NW" in "Smith St., NW")
Full_Name	String	35**	Full name of street, used for display and direction strings
ZIPL*	String	10	Postal code on left side of street
ZIPR*	String	10	Postal code on right side of street
State_Abbr	String	15	State abbreviation (e.g., "CA")
CityL*	String	32	City on the left side of the street
CityR*	String	32	City on the right side of the street

* The fields used to build the geocoding indices.

** These lengths are flexible. If a complete address line is more than 50 characters long, it will be truncated in ArcLogistics Route.

Routing Fields The fields used to build the indices used in routing

Field	Type	Length	Description
Meters	Number	7 digits, 3 dec.	Length of the edge in meters
FT_Minutes	Number	8 digits, 4 dec.	Minutes to cross edge in digitized direction
TF_Minutes	Number	8 digits, 4 dec.	Minutes to cross edge against digitized direction
UserID	Integer	7	User's ID of edge
ShapeID	Integer	7	ID of edge used by ArcLogistics Route
Fnode	Integer	7	ID of node at "from" end of edge in digitized direction
Tnode	Integer	7	ID of node at "to" end of edge in digitized direction
F_zlev	Integer	2+	Elevation of node at "from" end of edge in digitized direction
T_zlev	Integer	2+	Elevation of node at "to" end of edge in digitized direction
Disp_Code	Integer	2	Code for classifying streets

Notes

UserID A code you provide to link this edge to the Turn and Oneway shapefiles

ShapeID A code written by ArcLogistics Route to link this edge to the Turn and Oneway shapefiles. The value of the first record must be 0. Each subsequent record increases ShapeID by 1.

Fnode and Tnode Filled in by ArcLogistics Route during routing index construction. Leave them empty when you process your street data.

F_zlev and T_zlev Provide node elevation, which is used to establish network topology. If two edges end at the same point but have different node elevation values, then the edges are not considered connected in the network. Node elevations are logical elevations, not literal altitudes. Node elevation is useful for modeling overpasses, bridges, and tunnels.

Disp_Code Used to classify the streets. When you add a street data set to ArcLogistics Route, the largest connected set of streets with Disp_codes of 10, 20, or 30 ("major streets") is included in the major street network used by the ArcLogistics Route product's hierarchical solver. Disp_code creates two other shapefiles when you add street data to ArcLogistics Route: HwySt, which contains all streets with Disp_code 10 or 20, and MajorSt, which contains all streets with Disp_code 10, 20, or 30. Do not edit these shapefiles.

Disp_code	Description	Symbol	Major Street Network?
10	Major highway	Red	Yes*
20	Minor highway	Red	Yes*
30	Major surface street	Zoomed out: grey Zoomed in: blue	Yes*
40	Minor surface street	Grey	No

* If some major streets are left out of the major street network indices, a diagnostic shapefile called CmajorSt is created. CmajorSt includes all streets that were added to the major street network.

Oneway

Oneway is the set of one-way streets. Each one-way restriction that does not disconnect the network is used to modify the routing indices. When ArcLogistics Route rebuilds its routing indices, a shapefile called Addedoneway is created and populated with those Oneway edges that modified the routing indices.

Shape Type

Line

Attributes

Field	Type	Length	Description
UserID	Number	7	User's ID of edge
Oneway	String	2	"FT" = travel OK in digitized direction "TF" = travel OK in opposite direction
ShapeID	Number	7	ID of edge used by ArcLogistics Route

Note

Populate the ShapeID field from AllSt, using a join on your UserID field. Each edge in Oneway should have the same shape as the corresponding edge in AllSt.

Turn

Turn is the set of turn restrictions. Each turn restriction that does not disconnect the network is used to modify the routing indices. When ArcLogistics Route rebuilds its routing indices, a shapefile called Addedturn is created and populated with those Turn edges that modified the routing indices.

Each edge in Turn is related to two edges in AllSt: the "from" edge and the "to" edge. Turning from the "from" edge to the "to" edge is restricted.

Shape Type

Line

Attributes

Field	Type	Length	Description	Field
F_UserID	Number	7	User's ID of "from" edge	F_UserID
T_UserID	Number	7	User's ID of "to" edge	T_UserID
FshapeID	Number	7	ID of "from" edge used by ArcLogistics Route	FshapeID

Note

Populate the FShapeID and TShapeID fields from AllSt, using joins on the F_UserID and T_UserID fields. The edges in Turn can have the shape of the "from" edge, the "to" edge, or a shape that combines both edges in a single polyline.

Block (optional)

Block is the set of blocked streets. ArcLogistics Route will not allow vehicles to travel on street segments that are blocked. Each blocked street that does not disconnect the network is used to modify the routing indices. When ArcLogistics Route rebuilds its routing indices, a shapefile called Addedblock is created and populated with those blocked streets that modified the routing indices.

Shape Type Line

Attributes

Field	Type	Length	Description
UserID	Number	7	User's ID of edge
ShapeID	Number	7	ID of edge used by ArcLogistics Route
Disp_code	Number	2	Code for classifying streets

Disp_code values in Block are associated with those in AllSt.

AllSt	Block	Symbol
10	-1	Bold dashed red
20	-2	Bold dashed red
30	-3	Bold dashed blue
40	-4	Bold dashed black

Dtl-Cnty

Dtl-Cnty is a background layer on the ArcLogistics Route Map View. In the data included with ArcLogistics Route–Data Edition, it contains the outlines of the counties intersecting the extent of AllSt. Any other polygon shapefile with a Name field among its attributes could be used as Dtl-Cnty, for example, a city boundary shapefile.

Shape Type Polygon

Attributes

Field	Type	Length	Description
Name	Text	<any>	Name of county

ZIP

ZIP is a background layer on the ArcLogistics Route Map View. ZIP also determines the extent of the Geocode Address dialog's map when the postal code fallback feature is used. Any other polygon shapefile with a ZIP field among its attributes could be used as ZIP, for example, a city district boundary shapefile.

Shape Type Polygon

Attributes

Field	Type	Length	Description
ZIP	Text	10	ZIP Code (Postal Code)

Lakes

Lakes is an unlabeled background polygon layer. It is displayed with a light blue fill on ArcLogistics Route maps. Other than its shape, no information from this theme is used in ArcLogistics Route.

Shape Type Polygon

Parks

Parks is an unlabeled background polygon layer. It is displayed with a green fill on ArcLogistics Route maps. Other than its shape, no information from this theme is used in ArcLogistics Route.

Shape Type Polygon

Shapefiles in the ArcLogistics Route Background Directory

World World is an empty shapefile, but its presence is necessary in the \ArcLogistics Route\Background directory. No information is used from the attribute table of World. Leave this shapefile empty.

Shape Type Polygon

States States is the land background in ArcLogistics Route maps that are zoomed in. No information is used from the attribute table of States. At very large scales, graphics errors may occur when displaying States. If you experience these errors, divide the polygons in States into a one-degree grid. This should solve the problem.

Shape Type Polygon

ZO_States ZO_States is the land background in ArcLogistics Route maps that are zoomed out beyond the minimum display scale for the street data set. No information is used from the attribute table of ZO_States.

Shape Type Polygon

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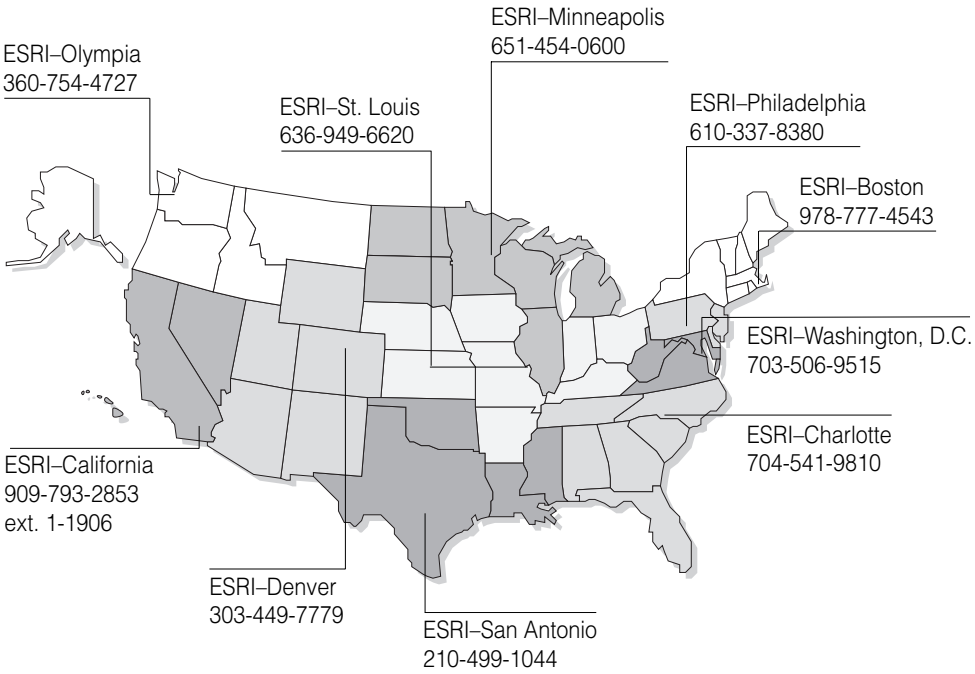

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