



**DRAFT**  
**Transportation Content**  
(Roads)

***The National Map***

**Version 1.0**

**March 11, 2005**

## **ABOUT THIS DOCUMENT**

This document contains the U.S. National Road Dataset based on the Linear Referencing System (LRS) approach. The road network data model described herein was adapted from the FGDC Geographic Information Framework Data Content Standards Transportation: Roads (Part 7c), July 2004 and the National Road Network, Canada, Level 1, Feature Catalogue with the intention of facilitating the use of both Canadian and U.S. road data in user applications. Some modifications have been made by the U.S. Geological Survey to better accommodate features and attributes of interest to the United States.

## ACRONYMS AND ABBREVIATIONS

DIR Directional

EID Event Identifier

ID Identifier

LRS Linear Referencing System

NID National Identifier

UUID Universal Unique Identifier

## TERMS AND DEFINITIONS OVERVIEW

Classes are grouped and presented in two packages: *Road Network* and *Event*. A package groups a set of classes with a view to organizing the model into more abstract structures and achieving a higher-level view. All related attributes are presented in the third (last) section herein.

## ROAD NETWORK PACKAGE

The *Road Network* package contains the set of classes that forms the Road Network geometry. Classes are grouped and presented in alphabetical order.

### Each class description includes the items below:

**Name:** The name of the feature for which information is required. The geometry of the feature is represented by the following symbols:

Simple Point primitive 

Simple Line primitive 

**Definition:** A description of the feature as it pertains to the U. S. National Road Dataset.

**Attribute(s):** A list of related attributes.

**Object Metadata:** A list of related metadata attributes.

**Association:** The association with other classes.

Mandatory: Indication of whether the feature acquisition is mandatory or not.

## Junction



Definition: A point feature that is always connected to one or more Road Element. A Junction is defined at the intersection of three or more roads, at the intersection of a Road Element, at the end of a dead end road and at the intersection of a Road Element with a National, or State Boundary.

Attribute(s): [NID](#), [JunctionType](#), [LoadDate](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [ObjectID](#)

Association: is the start of 1,N [RoadElement](#),  
is the end of 1,N [RoadElement](#)

Mandatory: Yes

## RoadElement



Definition: A road is a linear Section of the earth that is designed for or the result of vehicular movement. A Road Element is the representation of a road between Junctions. A Road Element is always bounded by two Junctions.

When crossing roads are separated by grades, the bisecting Road Elements do not share a Junction. Grade Separated Crossings between Road Elements involve road Structure events, either Bridges or Tunnels. If a Junction occurs at a Grade Separation, it is either connected to the lower set of Road Elements or to the higher, but never to both.

Planned roads are not represented in the National Road Dataset.

Attribute(s): [NID](#), [FromJunction](#), [ToJunction](#), [LoadDate](#), [Interstate](#), [US\\_Route](#), [State\\_Route](#), [County\\_Route](#), [Prefix\\_Dir](#), [Street\\_Name](#), [Street\\_Type](#), [Suffix\\_Dir](#), [Full\\_Street\\_Name](#), [Low\\_Address\\_Left](#), [High\\_Address\\_Left](#), [Low\\_Address\\_Right](#), [High\\_Address\\_Right](#), [Zip\\_Left](#), [Zip\\_Right](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [ObjectID](#)

Association: starts at 1,1 [Junction](#)  
ends with 1,1 [Junction](#)

Mandatory: Yes

## EVENT PACKAGE

The *Event* package contains the set of classes comprising the Events that are referenced to Road Network geometry. Classes are grouped by point and line events and presented in alphabetical order.

**Each description includes the items below.**

Name: The name of the Event for which information is required. The italicized symbols below indicate the geometric representation of the Event as derived from the associated Road Network geometry:

Simple Point primitive 

Simple Line primitive 

Definition: A definition of the Event as it pertains to the National Road Dataset.

Attribute(s): A list of related attributes.

Object Metadata: A list of related metadata attributes.

Association: The association with other classes.

Mandatory: Indication of whether the Event acquisition is mandatory or not.

## Point Events

### **CrossingPointEvent**

Definition: A point event on a Road Element indicating the presence of a crossing.

Attribute(s): [EID](#), [CrossingType](#), [FromPlanimetricMeasure](#),  
[FromGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: No

## ExitNumberPointEvent

Definition: A point event on a Road Element indicating the presence of an exit on a controlled access road.

Attribute(s): [EID](#), [ExitNumberPointType](#), [FromPlanimetricMeasure](#),  
[FromGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## ExternalPointEvent

Definition: A point event locating and providing linkage attributes to a non-National Road Dataset point event stored in another database.

Attribute(s): [EID](#), [AgencyName](#), [ExternalPointID](#), [EventName](#),  
[FromPlanimetricMeasure](#), [FromGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: No

## ReferencePointEvent

Definition: A point event positioned on a Road Element used to assist in dispatch type applications. It is often based upon actual driven distance vs. computed distance (i.e., it takes into consideration the topography of the land supporting the Road Element).

Attribute(s): [EID](#), [ReferencePointType](#), [FromPlanimetricMeasure](#),  
[FromGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: No

## StructurePointEvent

Definition: A point event identifying the location and characteristics of structures that support the road network.

Attribute(s): [EID](#), [GNISID](#), [Name](#), [StructureType](#), [FromPlanimetricMeasure](#), [FromGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## Linear Events

### AccessControlLineEvent

Definition: The degree of access control to the road from adjoining roads.

Attribute(s): [EID](#), [AccessControlType](#), [FromPlanimetricMeasure](#), [FromGroundMeasure](#), [ToPlanimetricMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

### ExternalLineEvent

Definition: A line event locating and providing linkage attributes to a non-National Road Dataset line event stored in another database.

Attribute(s): [EID](#), [AgencyName](#), [EventName](#), [ExternalLineID](#), [FromPlanimetricMeasure](#), [FromGroundMeasure](#), [ToPlanimetricMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: No

## MedianLineEvent

Definition: The type of median associated to the road.

Attribute(s): [EID](#), [MedianType](#), [FromPlanimetricMeasure](#), [FromGroundMeasure](#), [ToPlanimetricMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## NumberofLanesLineEvent

Definition: The number of dedicated traffic lanes on a road surface.

Attribute(s): [EID](#), [NumberofLanesType](#), [FromPlanimetricMeasure](#), [FromGroundMeasure](#), [ToPlanimetricMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## RoadClassLineEvent

Definition: The road classification as defined by the Transportation Implementation Team, from the highest to lowest class of road.

Attribute(s): [EID](#), [RoadClass](#), [FromPlanimetricMeasure](#), [ToPlanimetricMeasure](#), [FromGroundMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## RoadStatusLineEvent

Definition: A line event identifying the status of the road for traffic.

Attribute(s): [EID](#), [RoadStatus](#), [FromPlanimetricMeasure](#), [ToPlanimetricMeasure](#), [FromGroundMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## RoadSurfaceLineEvent

Definition: A line event identifying the road surface type of a Road Element.

Attribute(s): [EID](#), [RoadSurfaceType](#), [FromPlanimetricMeasure](#),  
[ToPlanimetricMeasure](#), [FromGroundMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## RoadTypeLineEvent

Definition: The type of route assigned to Road Element.

Attribute(s): [EID](#), [RouteType](#), [FromPlanimetricMeasure](#),  
[ToPlanimetricMeasure](#), [FromGroundMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## StructureLineEvent

Definition: A line event identifying the location and defined characteristics of structures built to support a road.

Attribute(s): [EID](#), [GNISID](#), [StructureType](#), [Name](#), [FromPlanimetricMeasure](#),  
[ToPlanimetricMeasure](#), [FromGroundMeasure](#), [ToGroundMeasure](#)

Object Metadata: [AcquisitionProvider](#), [AcquisitionTechnique](#), [LoadDate](#)

Association: is located on 1,1 [RoadElement](#)

Mandatory: Yes

## TrafficFlowDirectionLineEvent

Definition:	The direction of traffic flow allowed on a Road Element.
Attribute(s):	<a href="#">EID</a> , <a href="#">TrafficFlowDirection</a> , <a href="#">FromPlanimetricMeasure</a> , <a href="#">ToPlanimetricMeasure</a> , <a href="#">FromGroundMeasure</a> , <a href="#">ToGroundMeasure</a>
Object Metadata:	<a href="#">AcquisitionProvider</a> , <a href="#">AcquisitionTechnique</a> , <a href="#">LoadDate</a>
Association:	is located on 1,1 <a href="#">RoadElement</a>
Mandatory:	No

## TollLineEvent

Definition:	A line event identifying a toll feature associated with travel along the Road Element.
Attribute(s):	<a href="#">EID</a> , <a href="#">FromPlanimetricMeasure</a> , <a href="#">ToPlanimetricMeasure</a> , <a href="#">FromGroundMeasure</a> , <a href="#">ToGroundMeasure</a>
Object Metadata:	<a href="#">AcquisitionProvider</a> , <a href="#">AcquisitionTechnique</a> , <a href="#">LoadDate</a>
Association:	is located on 1,1 <a href="#">RoadElement</a>
Mandatory:	Yes

## ATTRIBUTE

Attributes are presented in alphabetical order and their descriptions include the following items.

**Name:** The name of the attribute for which information is required.

**Definition:** A definition of the attribute as it pertains to the National Road Dataset.

**Data Type:** Format used to store the attribute.

**Domain:** Authorized domain value for the attribute. Fixed domain attributes are presented as follows:

**Label:** Name of the attribute domain.

**Code:** Numeric code associated with the attribute domain for internal use.

Definition: Definition of the domain attribute.

Class(es): The name of the class(es) to which the attribute relates.

## AccessControlType

Definition: The degree of access control to the road from adjoining roads.

Data Type: Integer

Domain: [1-3]

Label:	Code:	Definition:
Full Access	1	A road that allows access to other roads, streets, and driveways without constraints.
Partial Access	2	A road that allows access to other roads and streets with constraints such as stop light.
No Access	3	A road where access is limited to signed exits.

Class(es): [AccessControlLineEvent](#)

## AcquisitionProvider

Definition: The affiliation of the organization that generated the object for the National Road Dataset.

Data Type: Integer

Domain: [1-4]

Label:	Code:	Definition:
Other	1	
Federal	2	
State	3	
Municipal	4	

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## AcquisitionTechnique

Definition: The type of data source used to generate the object for the National Road Dataset.

Data Type: Integer

Domain: [-1, 1-5]

Label:	Code:	Definition:
Unknown	-1	
Other	1	
GPS	2	
Orthoimage	3	
Orthophoto	4	
Digital Data	5	

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## AgencyName

Definition: The name of the agency storing the event

Data Type: String (100)

Domain: A known value

Class(es): [ExternalLineEvent](#), [ExternalPointEvent](#)

## CountyRoute

Definition: The identifier of a county route on a Road Element. A road can belong to more than one numbered/lettered route and have multiple route number attributes.

Data Type: String (10)

Domain: A known value

Class(es): [RoadElement](#)

## CrossingType

Definition: The type of road crossing on a Road Element.

Data Type: Integer

Domain: [1-5]

Label:	Code:	Definition:
Railway	1	A railway that intersects a Road Element at the same grade level.
Pedestrian Crosswalk	2	A passage for pedestrians that intersects a Road Element at the same grade level.
Culvert	3	A pipe placed underneath a Road Element to allow the passage of water.
Ford	4	A road crossing through a body of water without a bridge, ferry, or other man-made structure
Other	5	Other type of crossing

Class(es): [CrossingPointEvent](#)

## EID

Definition: The event unique identifier.

Data Type: [UUID](#)

Domain: A UUID string representation (32 characters).

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## EventName

Definition: A description of the non-National Road Dataset event available in the

linked database.

Data Type: String (100)

Domain: A known value

Class(es): [ExternalLineEvent](#), [ExternalPointEvent](#)

## **ExitNumberType**

Definition: The ID number of an exit on a controlled access road that has been assigned by the administrative authority.

Data Type: String (10)

Domain: A known value or “None” when no string value applies.

Class(es): [Junction](#), [RoadElement](#)

## **ExternalLineID**

Definition: The identifier of the line event stored in another database.

Data Type: String (32)

Domain: A known value

Class(es): [ExternalLineEvent](#)

## **ExternalPointID**

Definition: The identifier of the point event stored in another database.

Data Type: String (32)

Domain: A known value

Class(es): [ExternalPointEvent](#)

## **FromGroundMeasure**

Definition: The ground (3-D) distance marking the beginning of an event, measured from the From Junction of the Road Element locating the event.

Data Type: Double

Domain: [0-N]

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## FromJunction

Definition: The NID of the bounding Junction marking the beginning of a Road Element

Data Type: [UUID](#)

Domain: A UUID string representation (32 characters).

Class(es): [RoadElement](#)

## FromPlanimetricMeasure

Definition: The planimetric distance marking the beginning of an Event, measured from the From Junction of the Road Element locating the event.

Data Type: Double

Domain: [0-N]

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## Full\_Street\_Name

Definition: The full name of the street which includes either a prefix or suffix direction and the street type.

Data Type: String (50)

Domain: A known value

Class(es): [RoadElement](#)

## **GNISID**

Definition: The Geographic Names Information System identifier.

Data Type: Integer (10)

Domain: None

Class(es): [Structure Point Event](#)

## **High\_Address\_Left**

Definition: The to address, left.

Data Type: String (32)

Domain: A known value

Class(es): [RoadElement](#)

## **High\_Address\_Right**

Definition: The to address, right.

Data Type: String (32)

Domain: A known value

Class(es): [RoadElement](#)

## **Interstate**

Definition: The identifier of an Interstate route on a Road Element. A road can belong to more than one numbered/lettered route and have multiple route number attributes.

Data Type: String (10)

Domain: A known value

Class(es): [RoadElement](#)

## **JunctionType**

Definition: A type assignment based on the number of Road Elements joining at a

Junction.

Data Type: Integer

Domain: [-1,1-5]

Label: Code: Definition:

Unknown -1 Junction not specified

Intersection 1 An intersection between three or more Road Elements intersecting at the same grade level.

Dead End 2 A specific Junction that indicates that the Road Element ends and is not connected to any other Road Element.

Ferry 3 A specific Junction that indicates that a Road Element continues as a ferry.

Cul-de-sac 4 The closed end of a road that forms a loop or turn-around.

Traffic Circle 5 A junction of roads that form a circle around which traffic normally moves in one direction.

Class(es): [Junction](#)

## LoadDate

Definition: A date field that gives the date an instance was loaded.

Data Type: String (10)

Domain: A known value in the format YYYY/MM/DD

Class(es): [Junction](#), [RoadElement](#), [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberOfLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## Low\_Address\_Left

Definition: The from address, left.

Data Type: String (32)

Domain: A known value

Class(es): [RoadElement](#)

## **Low\_Address\_Right**

Definition: The from address, right.

Data Type: String (32)

Domain: A known value

Class(es): [RoadElement](#)

## **MedianType**

Definition: The type of median on the Road Element.

Data Type: Integer

Domain: [1-2]

Label: Code: Definition:

Full Median 1 Divided

No Median 2 Undivided

Class(es): [MedianLineEvent](#)

## **NID**

Definition: The national unique identifier.

Data Type: [UUID](#)

Domain: A UUID string representation (32 characters).

Class(es): [RoadElement](#)

## **NumberOfLanesType**

Definition: The number of dedicated traffic lanes on a road surface

Data Type: Integer

Domain: [1-99]  
Class(es): [NumberofLanesLineEvent](#)

## Offset

Definition: A value which is added to a route's measures

Data Type: Double

Domain: [0-N]

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternallineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## PrefixDir

Definition: The geographic direction that is part of the name and precedes the name.

Data Type: String (10)

Domain: A known value

Class(es): [RoadElement](#)

## ReferencePointType

Definition: The type of Reference Point.

Data Type: Integer

Domain: [1-2]

Label: Code: Definition:

Other Significant Point 1

Milepost Marker 2

Class(es): [ReferencePointEvent](#)

## RoadClass

Definition: The functional classification of the road element

Data Type: Integer

Domain: [1-9]

Label:	Code:	Definition:
Arterial with Limited Access	1	A primary highway accessed by way of ramps and multiple lanes of traffic.
Arterial without Limited Access	2	A primary highway that has intersections with other roads and does not have limited access.
Collector	3	A highway or road that connects local roads with arterials.
Local	4	All roads not defined as arterials or collectors.
Service	5	A road permitting vehicles access
4WD	6	A road usable only by four-wheel drive vehicles
Ramp	7	A roadway providing for the controlled movement between two or more roads
Trail	8	A designated path for pedestrian, bicycle, or other modes of travel
Ferry	9	A method of transport over water that connects roads on opposite shores

Class(es): [RoadClassLineEvent](#)

## RoadStatus

Definition: The operational status or availability of the road to through traffic.

Data Type: Integer

Domain: [1-8]

Label:	Code:	Definition:
Open to Traffic	1	
Proposed	2	
Under Construction	3	
Abandoned	4	

Winter Only	5
Summer Only	6
Private	7
Closed	8

Class(es): [RoadStatusLineEvent](#)

## RoadSurfaceType

Definition: The type of improvement applied to a road surface.

Data Type: Integer

Domain: [1-2]

Label:	Code:	Definition:
Paved	1	A road with a surface made of hardened material such as concrete or asphalt.
Unpaved	2	A road with a surface made of loose material such as gravel or dirt.

Class(es): [RoadSurfaceLineEvent](#)

## RouteType

Definition: The identifier of a particular route in a given road network as assigned by the administrative authority.

Data Type: Integer

Domain: [1-7]

Label:	Code:	Definition:
Business Route	1	
By-Pass	2	
Alternate	3	
Scenic	4	
Emergency	5	

Evacuation            6  
Temporary            7        Detour  
Class(es):        [RouteTypeLineEvent](#)

## State\_Route

Definition:        The identifier of the state route on a Road Element. A road can belong to more than one numbered/lettered route and have multiple route number attributes.

Data Type:        String (10)

Domain:            A known value

Class(es):        [RoadElement](#)

## Street\_Name

Definition:        The name of the street recognized by the municipality or name authority which may include either a prefix or suffix.

Data Type:        String (50)

Domain:            A known value

Class(es):        [RoadElement](#)

## Street\_Type

Definition:        A part of the Street Name of a Road Element identifying the Street Type.

Data Type:        String (50)

Domain:            A known value

Class(es):        [RoadElement](#)

## Structure\_Type

Definition:        A manmade structure built to support a road or control traffic. It may be built at, above, or below grade.

Data Type: Integer

Domain: [1-10]

Label:	Code:	Definition:
Bridge	1	A manmade construction that supports a road on a raised structure and serving to span an obstacle, river, another road, or railway.
Bridge Covered	2	A manmade construction that supports a road on a covered raised structure and spans an obstacle, river, another road, or railway.
Bridge Moveable	3	A manmade construction that supports a road on a moveable raised structure and spans an obstacle, river, another road, or railway.
Bridge Unknown	4	Not specified
Tunnel	5	An enclosed manmade construction built to carry a road through or below a natural feature or other obstructions.
Snowshed	6	A manmade roofed structure built over a road in mountainous areas to prevent snow slides from blocking the road.
Dam	7	A manmade linear structure built across a waterway or floodway to control the flow of water and supporting a road for motor vehicles.
Toll	8	A manmade structure where a travel fee is collected at entry or exit.
Gate	9	A manmade structure that may be permanent or removable to block an entrance or passage.
Obstruction	10	A manmade structure to impede traffic.

Class(es): [StructurePointEvent](#)

## Suffix\_Dir

Definition: The geographic direction that is part of the name and follows the name.

Data Type: String (10)

Domain: A known value

Class(es): [RoadElement](#)

## ToGroundMeasure

Definition: The ground (3-D) distance marking the end of an event, measured from the From Junction of the Road Element locating the event.

Data Type: Double

Domain: [0-N]

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## ToJunction

Definition: The NID of the bounding Junction marking the end of a Road Element

Data Type: [UUID](#)

Domain: A UUID string representation (32 characters).

Class(es): [RoadElement](#)

## ToPlanimetricMeasure

Definition: The planimetric distance marking the end of an event, measured from the From Junction of the Road Element locating the event.

Data Type: Double

Domain: [0-N]

Class(es): [CrossingPointEvent](#), [ExitNumberPointEvent](#), [ExternalPointEvent](#), [ReferencePointEvent](#), [StructurePointEvent](#), [AccessControlLineEvent](#), [ExternalLineEvent](#), [NumberofLanesLineEvent](#), [RoadClassLineEvent](#), [RoadStatusLineEvent](#), [RoadSurfaceLineEvent](#), [RouteTypeLineEvent](#), [StructureLineEvent](#), [TrafficFlowDirectionLineEvent](#), [TollLineEvent](#)

## TrafficFlowDirection

Definition: The permissible flow of traffic allowed on a Road Element.

Data Type: Integer

Domain: [1-2]

Label:	Code:	Definition:
One Way Flow	1	Traffic flow is allowed in one direction only
Bi-Directional Flow	2	Traffic flow is allowed in both directions.

Class(es): [TrafficFlowDirectionLineEvent](#)

## UpdateStatus

Definition: The type of data update performed.

Data Type: Integer

Domain: [1-7]

Label:	Code:	Definition:
Add	1	
Modify Attribute	2	
Modify Geometry	3	
Delete Feature	5	
Delete Relationship	6	
Add Metadata	7	

Class(es): [Status](#)

## US\_Route

Definition: The identifier of a U.S. route on a Road Element. A road can belong to more than one numbered/lettered route and have multiple route number attributes.

Data Type: String (10)

Domain: A known value

Class(es): [RoadElement](#)

### **Zip\_Left**

Definition: The five digit zip code, left.

Data Type: Integer

Domain: [0-N]

Class(es): [RoadElement](#)

### **Zip\_Right**

Definition: The five digit zip code, right.

Data Type: Integer

Domain: [0-N]

Class(es): [RoadElement](#)