Pilot Uniform Data Model

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Deliverable 2.1 - Draft uniform data model.

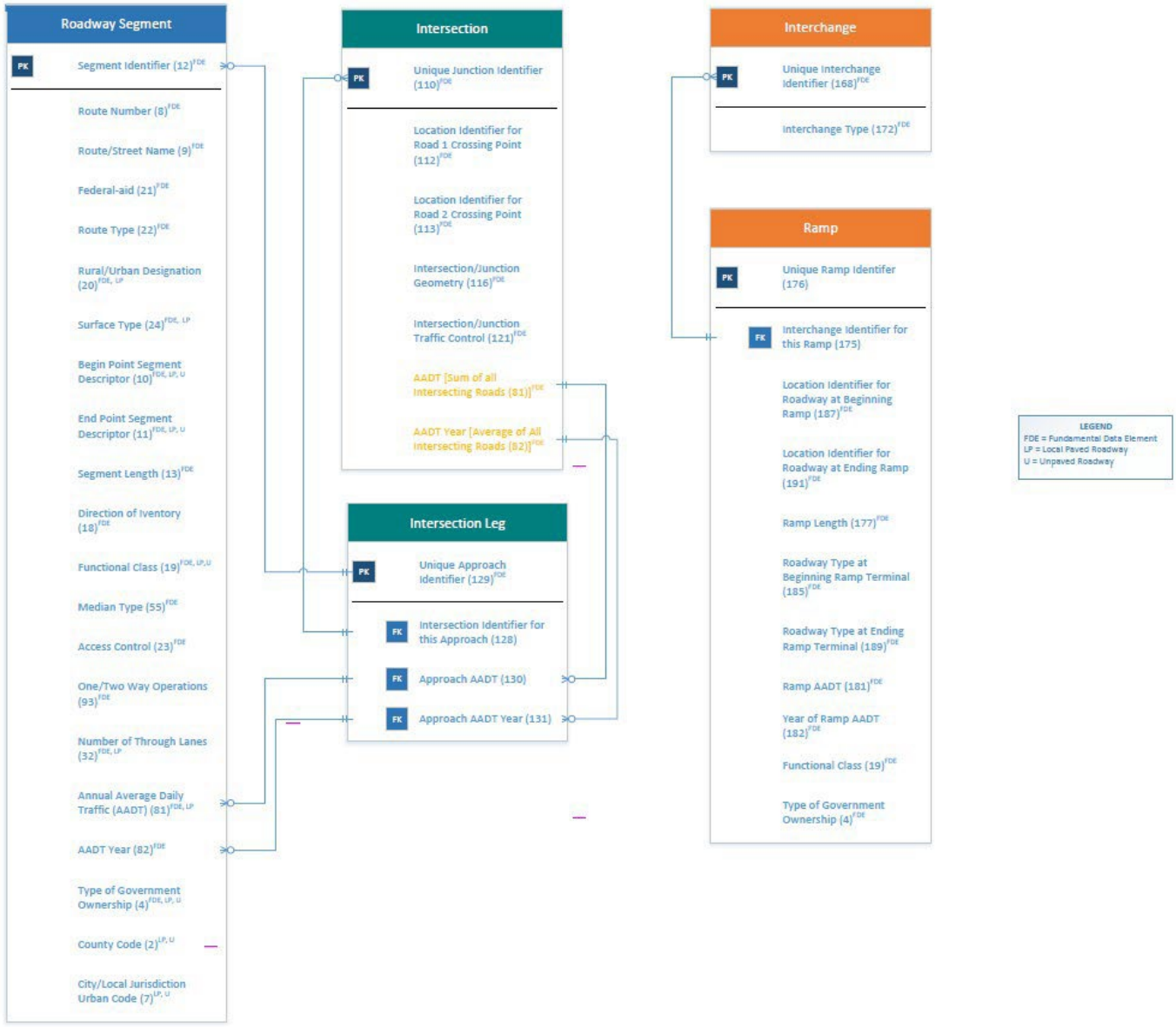
This report describes a data model that can be used to categorize and show links between the Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements (FDE) and additional suggested elements in preparation for data collection among pilot agencies.

MIRE elements have been grouped into six simplified data types in version 2.0:

I. **Segment**
II. **Intersection**
III. **Intersection Leg**
IV. **Interchange/ramp**
V. Horizontal Curve
VI. Vertical Grade

The bolded data types are the types that include an FDE and form the foundation for the pilot uniform data model. The model includes each FDE within the data type and additional suggested elements to support those FDEs. The four data types have been grouped into three main categories with subcategories as described below. MIRE element numbers are shown in parentheses for each reference.

MIRE FDE Uniform Data Model Diagram



MIRE FDE Uniform Data Model Diagram (continued)

Roadway Segment Table
The roadway segment table category consists solely of the roadway segment table.

Roadway Segment Table

Primary Key: Segment Identifier (12)
A segment in this table is defined by the route number (8), the route/street name (9) and the begin point (10) and end point segment descriptors (11). The county code (2) and city/local jurisdiction urban code (7) are additional suggested elements to incorporate into the segment identifier (12). Additional elements in the roadway segment table include: federal-aid (21), rural/urban designation (20), surface type (24), segment length (13), direction of inventory (18), functional class (19), median type (55), access control (23), one/two-way operations (93), number of through lanes (32), annual average daily traffic (AADT) (81), AADT year (82), and type of government ownership (4). The roadway segment table is linked to the intersection leg table by the segment identifier (12). Additionally, the AADT and AADT year elements are used to populate the intersection leg approach AADT and approach AADT year elements, respectively.

Intersection/Intersection Leg Tables

The intersection and intersection leg tables are grouped in this category. The intersections will form a one-to-many relationship with the intersection legs. The intersection legs should have a one-to-one relationship with the roadway segments.

Intersection Table

Primary Key: Unique Junction Identifier (110)
The intersection table describes unique junctions along the roadway segments that are described by the location identifier for the road 1 crossing point (112) and location identifier for the road 2 crossing point (113). The intersection table contains the intersection/junction geometry (116) and the intersection/junction traffic control (121) elements. In addition, the intersection table is expected to contain cumulative value elements for AADT (81) and AADT Year (82) for the sum or average of all intersecting roads respectively. The intersection table is linked to the intersection leg table by the unique junction identifier.

Intersection Leg Table

Primary Key: Unique Approach Identifier (129)
The intersection leg table contains two or more records for each intersection. The intersection legs are linked to the roadway segments by the unique approach identifier (129) and to the intersections by the intersection identifier for this approach (128). The Approach AADT (130) and Approach AADT Year (131) elements are contained in this table and form additional links to the roadway segment and intersection tables. The approach AADT is expected to link to the roadway segment AADT and then be summed for all legs to populate the intersection table. The approach AADT year is also expected to link to segment AADT and then be averaged for all legs to populate the intersection table.

Ramp/Interchange Tables
The ramp/interchange tables combine to describe each interchange and its respective ramps separately from the roadway segment and intersection tables. Interchanges form a one-to-many relationship with the ramps.

Interchange Table

Primary Key: Unique Interchange Identifier (168)
The interchange table is defined by the unique interchange identifier (168) and contains the interchange type (172) element. Defining an interchange is essential for categorizing the associated ramps. Each interchange links to one or more ramps by the unique interchange identifier.

Ramp Table

Primary Key: Unique Ramp Identifier (176)
The ramp table describes each unique ramp and its related elements. Ramps are defined by the location identifier for roadway at beginning ramp (187) and the location identifier for roadway at ending ramp (191). The table also contains the ramp length (177), roadway type at beginning ramp terminal (185), roadway type at ending ramp terminal (189), ramp AADT (181), year of ramp AADT (182). The functional class (19) and type of government ownership (4) should be defined by the adjacent roadway segment. The ramp table is linked to the interchange table by the interchange identifier for this ramp (175).