



MASSDOCS
Pilot

MassGIS Data: Massachusetts Department of Transportation (MassDOT) Roads



MassGIS (Bureau of Geographic Information) (/massgis)

MassGIS maintains a comprehensive, statewide database of spatial information for mapping and analysis supporting emergency response, environmental planning and management, transportation planning, economic development, and transparency in state government operations.

Visit the MassGIS website (<https://www.mass.gov/organization/massgis-bureau-of-geographic-information>)

Browse all MassGIS data layers (<https://www.mass.gov/services/details/massgis-data-layers>)

MassGIS Data: Massachusetts Department of Transportation (MassDOT) Roads

June 2014

MassDOT Massachusetts Roads

(Formerly Mass. Highway Dept. (MHD) Roads and Executive Office of Transportation (EOT) Roads)

Download these layers

(http://download.massgis.digital.mass.gov/shapefiles/state/MassDOT_Roads_SHP.zip)

(<http://www.mass.gov/anf/images/itd/massgis/datalayers/massdotrds.png>)

This layer is the official state-maintained street transportation dataset available from MassGIS and represents all the public and a good portion of the private roadways in Massachusetts, including designations for Interstate, U.S. and State highways.

Formerly known as the Massachusetts Highway

Department (MHD) Roads, then the Executive Office of

Transportation - Office of Transportation Planning (EOT-OTP) Roads, the MassDOT roads layer includes linework from the 1:5,000 road and rail centerlines data that were interpreted as part of the **Black and White Digital**

Orthophoto (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/oqdesc.html>) project. The **Massachusetts Department of**

Transportation - Office of Transportation Planning (<http://www.massdot.state.ma.us/planning/Main.aspx>), which maintains this layer, continues to add linework from municipal and other sources and update existing linework using the most recent color orthophoto imagery as a base. In addition to the new linework, the attribute table includes all "road inventory" fields maintained in MassDOT's linear referencing system. See the **Attributes** section below for more details.



License

Creative Commons Attribution

(<http://opendefinition.org/licenses/cc-by/>)

OPEN DATA

Other Access

The information on this page (the dataset metadata) is also available in these formats.

JSON

RDF

via the **DKAN API**
(<https://docs.getdkan.com/en/latest/apis/index.html>)

The following feature classes are available:

- **EOTROADS_ARC** (aka "All Roads") is the full statewide layer. Created from this layer are two subsets that may be useful in smaller-scale mapping:
- **EOTMAJROADS_ARC** comprises major roads (CLASS = 1 through 4).
- **EOTMAJROADS_RTE_MAJOR** is a multi-part line feature class consisting of all Interstate and U.S. routes and several major State routes.

The layer is up-to-date through December 31, 2013. The data were released by MassGIS on June 13, 2014.

Note: The "EOT" in the layer names was not changed to "DOT" because legacy application code and web services rely on the existing names.

Production

(<http://www.mass.gov/anf/images/itd/massgis/datalayers/massdotrds2.png>)

MassGIS received the 2013 year-end release of MassDOT's Road Inventory data and further processed the data to facilitate display, particularly in **OLIVER** (http://maps.massgis.state.ma.us/map_ol/oliver.php) (which includes the **statewide Base Map** (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/online-mapping/massgis-basemap.html>)) and the . Processing included:



- adding the CLASS, ADMIN_TYPE and RDTYPE fields, used for line and route marker (shields) symbolization
- adding the ALTRTNUM<1-4> and ALTRTITYPE fields for enhanced route marker labeling
- adding the RT_NUMBER and STREET_NAME fields so that existing applications that use these fields would continue to function

To produce the Major Roads layer (**EOTMAJROADS_ARC**), MassGIS selected arcs where CLASS = 1, 2, 3 and 4 from the full layer, dropped all fields included in the original layer from MassDOT, and dissolved on all the fields added by MassGIS to reduce the number of arc segments.

The Major Routes layer (**EOTMAJROADS_RTE_MAJOR**) was produced by MassGIS from the Major Roads layer by selecting all features where ADMIN_TYPE = 1 (Interstate) or 2 (U.S.), or where the RT_NUMBER or any of the alternate route numbers for state routes (ADMIN_TYPE = 3) is 2, 3, 8, 9, 18, 24, 25, 28 or 128. In ArcGIS 10.0, these roads were dissolved as multi-part features on the ADMIN_TYPE and RT_NUMBER fields. This layer was produced for fast display at small (e.g. statewide) scales rather than for true route-based analysis.

Attributes

Fields from MassGIS Each arc in the "All Roads" **EOTROADS_ARC** feature class contains the following fields added by MassGIS:

Field Name	Type	Description
------------	------	-------------

CLASS	1-I	<p>Designates a road based on functional classification and access; used for plotting. Classes are:</p> <p>1 - Limited Access Highway</p> <p>2 - Multi-lane Highway, not limited access</p> <p>3 - Other numbered route</p> <p>4 - Major road - arterials and collectors</p> <p>5 - Minor street or road (with Road Inventory information, not class 1-4)</p> <p>6 - Minor street or road (with minimal Road Inventory information and no street name)</p> <p>Note: Tracks and Trails (formerly CLASS codes 7 and 8) have been removed from this layer and are now part of the statewide Tracks and Trails (http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/trails.html) datalayer.</p> <p>The CLASS field was first calculated to 0 for all records and then coded in Oracle SQL*Plus based on the following WHERE clauses:</p> <p>1: ADMIN_TYPE = 1 or (FUNCTIONALCLASSIFICATION = 1 and ACCESSCONTROL = 1) or (FUNCTIONALCLASSIFICATION = 2 and ACCESSCONTROL = 1)</p> <p>2: CLASS = 0 and ACCESSCONTROL <> 1 and NUMBEROFTRAVELLANES > 1 and OPPOSITENUMBEROFTRAVELLANES > 0 and (RT_NUMBER <> '' or RT_NUMBER IS NOT NULL)</p> <p>3: CLASS = 0 and (RT_NUMBER <> '' or RT_NUMBER NOT LIKE 'N%' or RT_NUMBER IS NOT NULL)</p> <p>4: CLASS = 0 and ((FUNCTIONALCLASSIFICATION IN (2,3,5)) or (FUNCTIONALCLASSIFICATION = 1 and ACCESSCONTROL = 1 and ADMIN_TYPE <> 1))</p> <p>5: (CLASS = 0 and FUNCTIONALCLASSIFICATION IN (0,6)) or (CLASS = 0 and STREET_NAME <> '' and STREET_NAME NOT LIKE 'RAMP-RT%' and STREET_NAME IS NOT NULL)</p> <p>6: CLASS = 0</p>
ADMIN_TYPE	1-I	<p>Type of route in the RT_NUMBER field. Based on the ROUTESYSTEM field. Types are:</p> <p>1 - Interstate</p> <p>2 - U.S. Highway</p> <p>3 - State Route</p> <p>0 - Not a numbered route</p>
STREET_NAME	80-C	Street name. Same as the STREETNAME field, included for legacy application purposes. In the shapefile downloads this field is STREET_NAM.
RT_NUMBER	4-C	Primary route number. Route number of the road type listed in ADMIN_TYPE (where ADMIN_TYPE is 1-3). Based on the ROUTENUMBER field but not including values that begin with "N", which are codes used internally by MassDOT and not actual route numbers.
ALTRTNUM1 ALTRTNUM2 ALTRTNUM3 ALTRTNUM4	4-C	Alternate Route numbers. Type is either U.S. or State route for ALTRTNUM1, as indicated in the ALTRTTYPE field. All other alternate routes are State routes. No road in the state has more than four alternate routes. These fields were populated using the RoadSegmentToRouteList table that was included in the data delivery from MassDOT.
ALTRTTYPE	1-I	Administrative Type for the route number in the ALTRTNUM1 field (2 = U.S. Highway, 3 = State Route)

RDTYPE	1-I	Expanded version of the CLASS field, with additional values for ramps and tunnels. Values 1 through 6 are the same as CLASS (above). Other values include: 7 - Ramp [Based on SQL query where (FACILITYTYPE in (7, 8, 9, 10) and STREET_NAME like 'RAMP%' and RT_NUMBER IS NULL and CLASS > 2) or (FACILITYTYPE = 1 and STREET_NAME like 'RAMP%' and RT_NUMBER IS NULL and CLASS > 2)]. Some segments were coded as a ramp based on visual review of the data. In places where CLASS 1 highways intersected with other CLASS 1 highways, connecting ramps were coded RDTYPE = 1. 8 - Tunnel [Based on SQL query where FACILITYTYPE in (3, 11) and CLASS > 3] 9 - Tunnel - Limited Access Highway [Based on SQL query where FACILITYTYPE in (3, 11) and CLASS = 1] 10 - Tunnel - Multi-lane Highway, not limited access [Based on SQL query where FACILITYTYPE in (3, 11) and CLASS = 2] 11 - Tunnel - Other Numbered Route [Based on SQL query where FACILITYTYPE in (3, 11) and CLASS = 3]
MGIS_TOWN	1-I	Official city or town name

The Major Roads layer **EOTMAJROADS_ARC** contains only the above fields added by MassGIS except MGIS_TOWN.

The CLASS field contains values 1, 2, 3 and 4.

The Major Routes layer **EOTMAJROADS_RTE_MAJOR** contains only the ADMIN_TYPE and RT_NUMBER fields.

Fields from MassDOT

The other fields in the arc attribute table were included in the data from MassDOT. These include roadway classification, ownership, physical conditions, traffic volumes, pavement conditions, highway performance monitoring information, and more. For details see the **Road Inventory Data Dictionary**

(<http://www.massdot.state.ma.us/Portals/17/docs/RoadInventory/RoadInvDictionary.pdf>) (PDF format, 105 kb).

When downloading (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/ftppeotroads.html>) the data as a shapefile, please be aware that since the shapefile format only allows for ten characters in field names, the longer Road Inventory File field names have been truncated when converted from an ArcSDE layer to a shapefile. See the **conversion chart**

(<http://www.massdot.state.ma.us/Portals/17/docs/RoadInventory/shapefileConversion.pdf>) (PDF format, 8 kb)

between the geodatabase field names and the shapefile field names for clarification.

Maintenance

The **The Massachusetts Department of Transportation - Office of Transportation Planning**

(<http://www.massdot.state.ma.us/planning/Main.aspx>) regularly updates this layer. MassGIS receives the official

MassDOT version and after completing the processing described above makes updated data available once a year. To report errors or changes:

<http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/DataUpdateProcess.aspx>

(<http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/DataUpdateProcess.aspx>)

In November 2001, roads defined as Tracks and Trails were removed from this layer and placed in their own statewide layer, **Tracks and Trails** (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/trails.html>).

The RDTYPE and MGIS_TOWN fields were added in the September 2012 release.

Also see the **Limited Access Highway Exits** (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/highwayexits.html>) layer.

Since the MassDOT roads do not contain address ranges, they may not be used for address matching (geocoding) in GIS software. The most recent roads data available from MassGIS that may be used for geocoding applications are the **TIGER roads** (<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/census2010.html>) from the 2010 U.S. Census.

Last Updated 6/13/2014

Items

Record Info

Contributor	MassGIS (Bureau of Geographic Information) (/massgis)
Modified Date	2017-11-20
Release Date	2017-11-09
Frequency	Irregularly
Identifier	c557e769-8ea9-4dc1-b636-09d9d56fba0b
Spatial / Geographical Coverage Location	Massachusetts
License	Creative Commons Attribution (http://opendefinition.org/licenses/cc-by/)
Author	MassGIS
Contact Name	MassGIS
Contact Email	massgismail@mass.gov (mailto:massgismail@mass.gov)
Public Access Level	Public
Data Quality	False
Content Type	Data (/content-type/data)
Language	English (United States)