2015

LADOTD - Convert Latitude/Longitude to Route/Milepoint

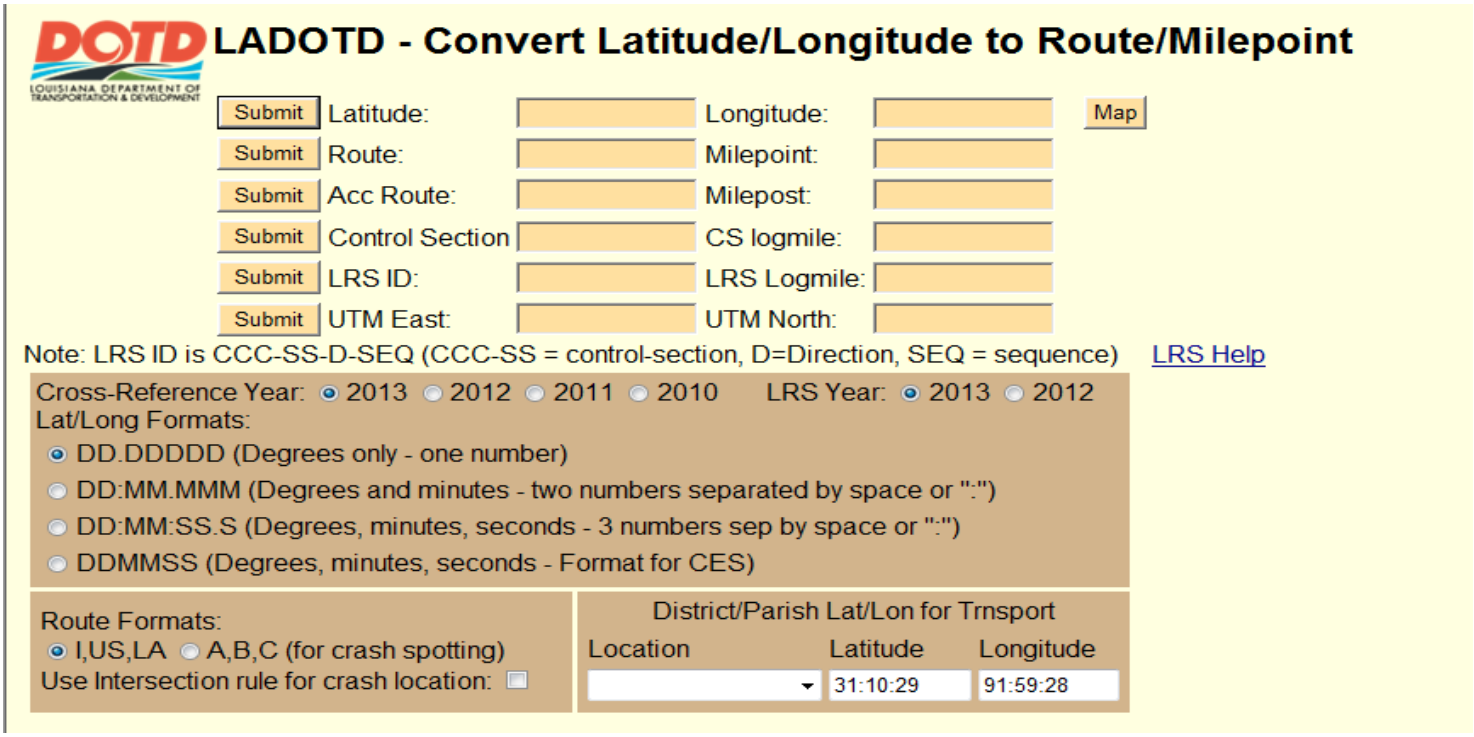
http://www8.dotd.la.gov/latlong.net

This application will convert locations from any one of the following reference systems to the others along with generating a map of the location of the crash/crashes: latitude/longitude, control-section/logmile, route/milepoint and accident route/milepost

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

M. Connors
LA DOTD Highway Safety
1/1/2015

1) INITIAL DATA/ELEMENT ENTRY SCREEN:



Revised as of May 3, 2011 (New Basemap)

[Engineering Applications | LADOTD Intranet] Upload and map a File of Points

"Old" latlong Program (using old basemap) Upload csv file of lat/long to convert to csect/logmile

itouchmap.com - Get latitude/longitude of a point Upload csv file of csect/logmile to convert to lat/long (new)

Help

This program will convert locations from any one of the following reference systems to the others:
1. latitude/longitude
2. control-section/logmile
3. lrs id/distance
4. route/milepoint
5. accident route/milepost
6. utm zone 15

Which conversion it does depends on the button you press.

Route/Milepoint

The route and milepoint are those used on the LADOTD Surface-Type Log file. The milepoint is the measured distance from the beginning of the route to the point in question.

Acc Route/Milepost

The route and milepost are those used in the LADOTD Surface-Type Log file for cross-referencing traffic accidents according to the milepost markers on the road.

Control-Section / Logmile

The control-section and logmile are those defined by the LADOTD Control-Section manual and the LADOTD Surface-Type Log file.

LRS ID / Distance

The LRS ID is described by the document "LRS_ID_Procedure.doc". It is the new way at LADOTD of defining road segments. The distance associated with the LRS ID is in the direction of travel on the road segment. The corresponding control-section/logmile and route/milepoint are those belonging to the main line of the roadway that is closest to the point in question.

Input Formats

The latitude/longitude may be input as:
DD.DDDDD - whole degrees and decimal parts of degrees
DD:MM.MMM - whole degrees, whole minutes and decimal parts of minutes.
DD:MM:SS.SS - whole degrees, whole minutes, and seconds.
If you use the second or third options, you must use a space or a colon(:) as a separator.

The route may be input as (for example:)
A0010 - for I-10
I-10 - for I-10
US0080 - for US 80
B0080 - for US 80
LA3246 - for LA 3246
C3246 - for LA 3246
US0190X - for US 190 business
You may be confused by the "A,B,C" designation. This is the way the Department of Public Safety identifies Interstate, U.S., and Louisiana highways. The option is included for ease of interfacing with their system.

Output formats

The output formats are selected by the radio buttons. They are similar to the input formats.

Accuracy

The accuracy of the results varies. In some cases, it will hit it on the head. In others, it may be off by a half a mile. I'm working on improving the data. Also, the latitude and longitude are stored with only 5 decimal places of accuracy (7 digits total). The route information is stored to the nearest .001 miles, but is displayed using the nearest .01 mile.

Source of Data

The route and control-section cross-reference data are from the LADOTD Surface-Type Log File.
The latitude/longitude data by control-section logmile was obtained from the LADOTD mapping section in the form of an ESRI geodatabase.
The UTM conversions are calculated.

Converting latitude/longitude to control-section/logmile

The source data set contains a set of line segments no more thatn 0.1 mile long for each control-section. Each segment contains the control-section, beginning logmile, ending logmile, beginning latitude, ending latitude, beginning longitude, and ending longitude. The program finds the line segment segment closest to the target point (based on the latitude and longitude) and draws a perpendicular to that line. The logmile is then calculated.

If the intersection rule is applied, the second closest line segment is found. If it is on another route and meets the intersection rule requirements, that segment is used instead.

Intersection Rule

If a traffic crash (accident) occurs at an intersection, the location is assigned to the lowest numbered route. If the intersection includes the interstate and a U.S. highway, the interstate takes priority. If the intersection includes a U.S. highway and a LA highway, the U.S. highway takes priority. If the intersection includes a business route and a "non-business" route at the same level (US, LA), the "non-business" route takes priority.

For the intersection rule to apply, the location must be no more than 150 feet away from the "other" route.

Glenn Chustz - LADOTD - April 17, 2002

UTM/DOQQ Revisions - November 11, 2002

The UTM coordinates were added as an option. This will convert the data from latitude/longitude to utm zone 15 coordinates in meters. It also creates a link to the DOQQ that contains the location.

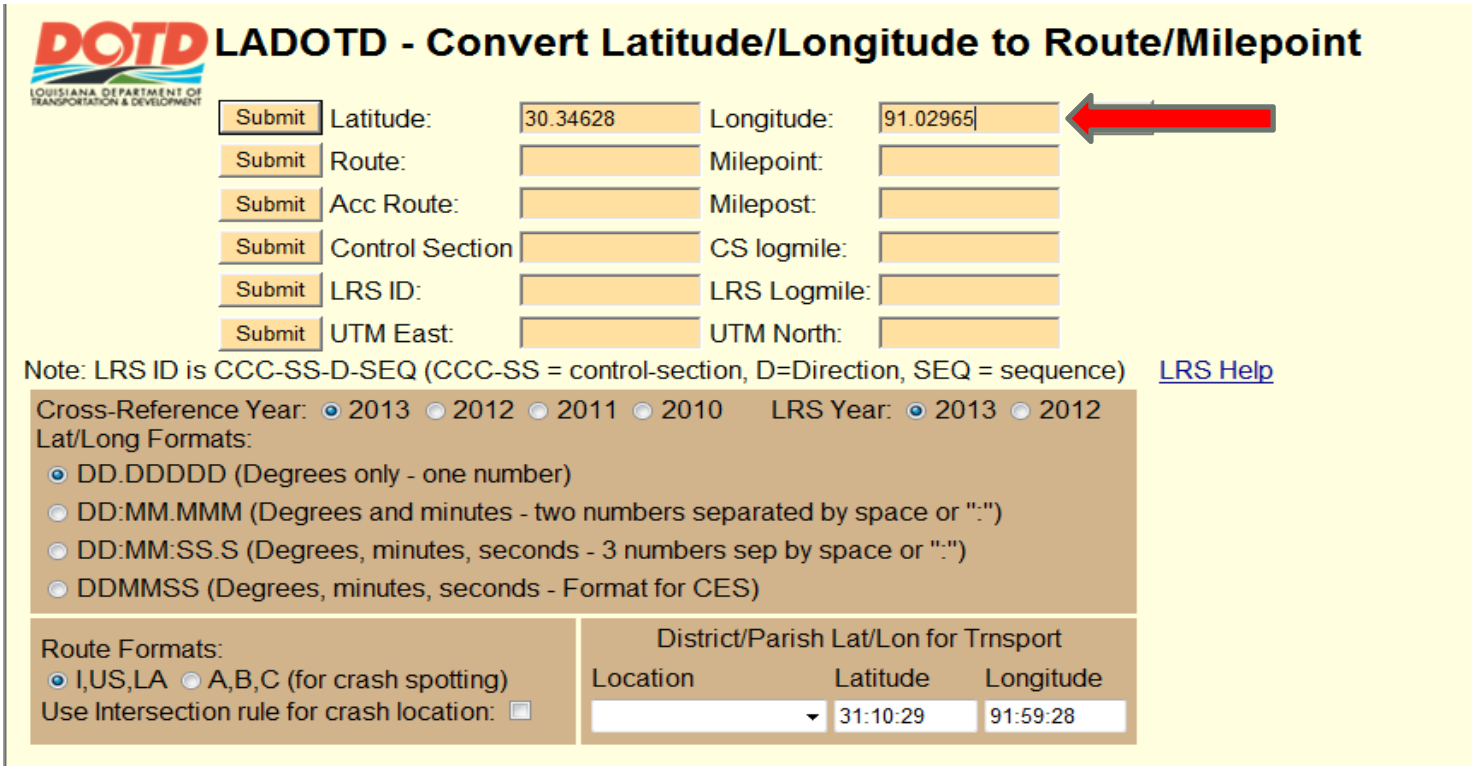
The UTM to lat/long conversion calculations in this program were copied from the National Geodetic Survey (NGS) program named UTMS, available from the web site http://www.ngs.noaa.gov/TOOLS/utm.shtml which also has an interactive mode which allows you to do the same calculations.
A useful resource is the NGS Geodetic Toolkit:
http://www.ngs.noaa.gov/TOOLS/

Disclaimer:
This program is in no way intended to replace the Department's GIS tools.

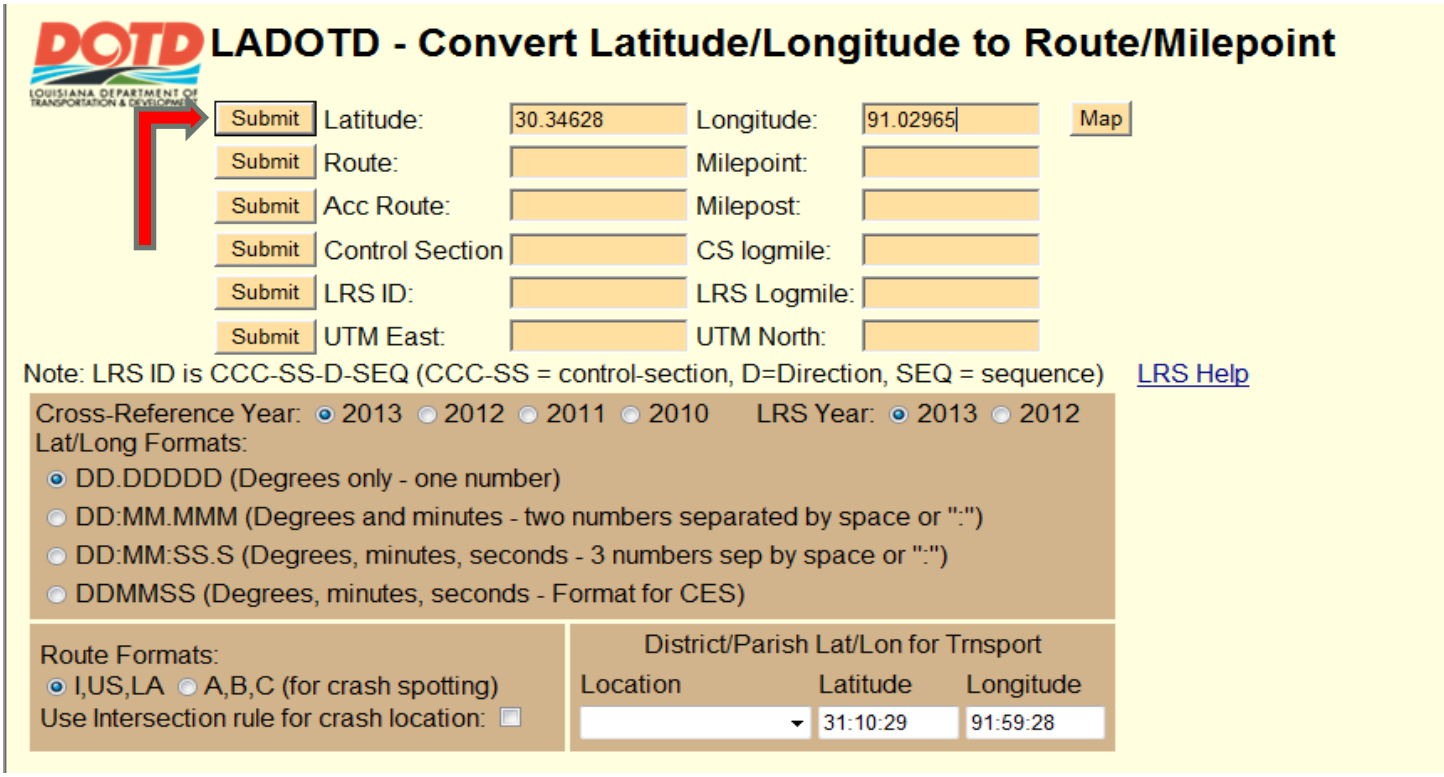
2) **ENTER EITHER ONE OF THE FOLLOWING IN THE DESIGNATED FIELD:**

***** We will use Latitude/Longitude for this example *****

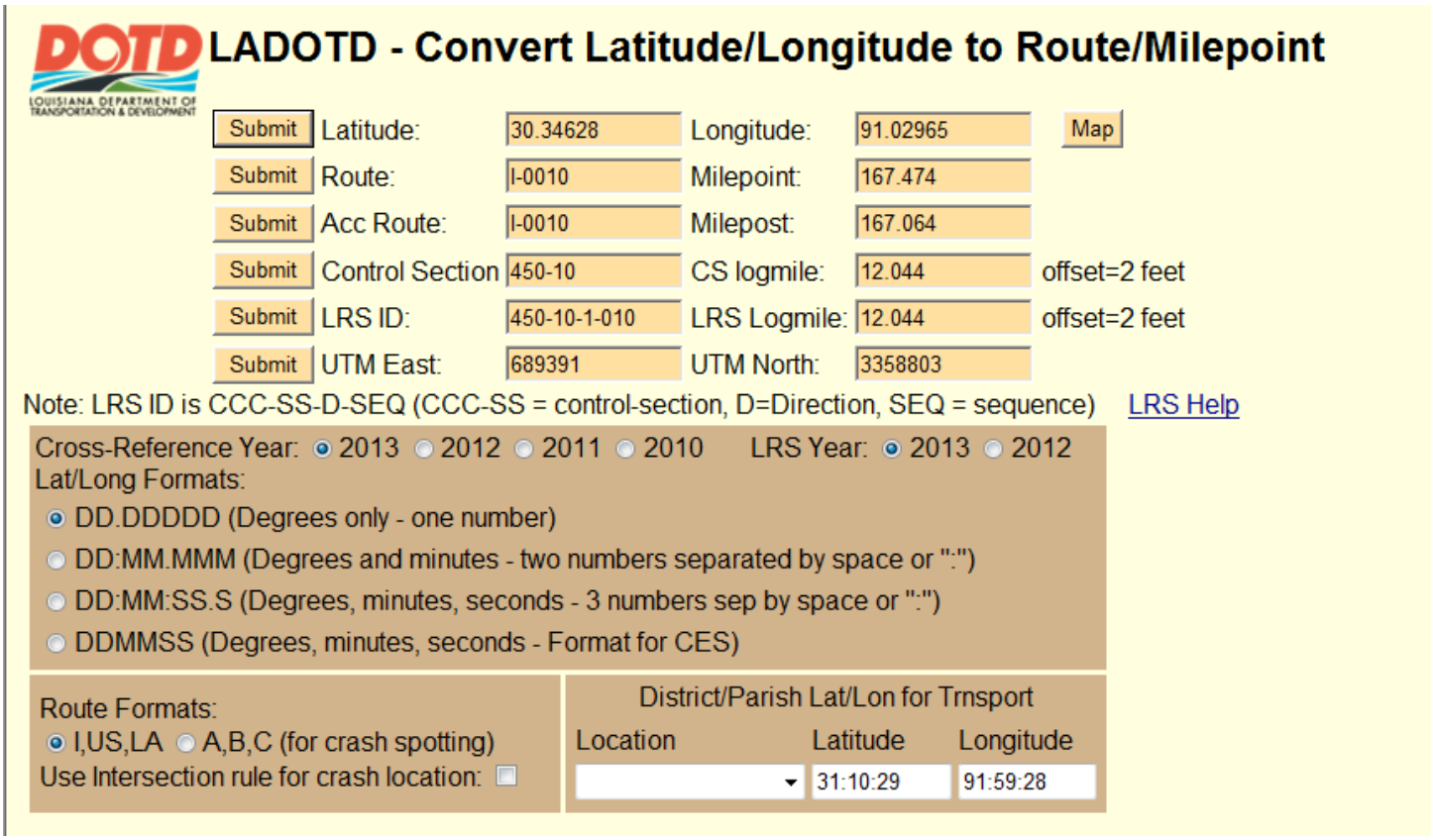
- **Latitude/Longitude**
- **Route/Milepoint**
- **Accident Route/Milepost**



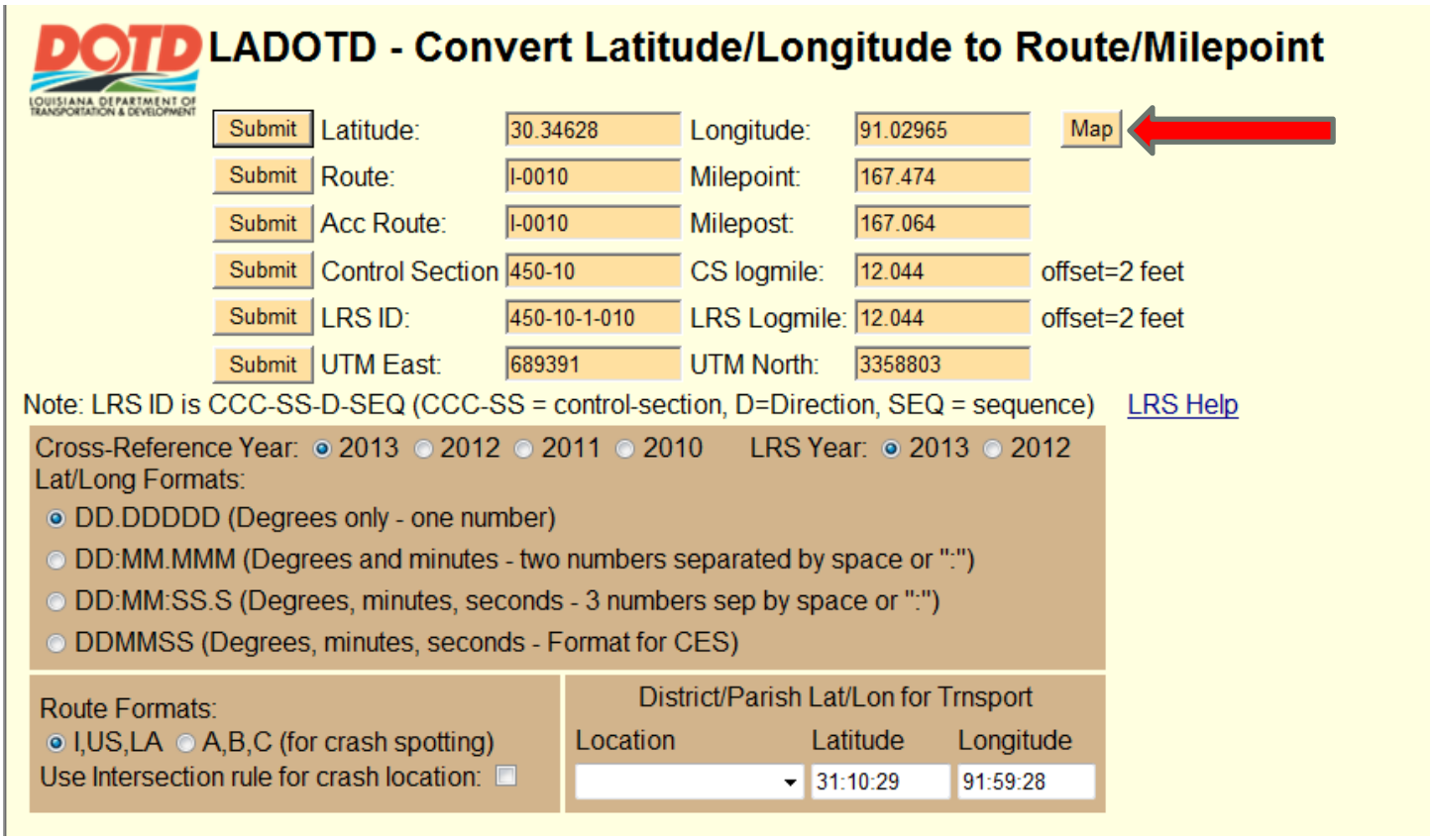
3) **CLICK THE SUBMIT BUTTON:**

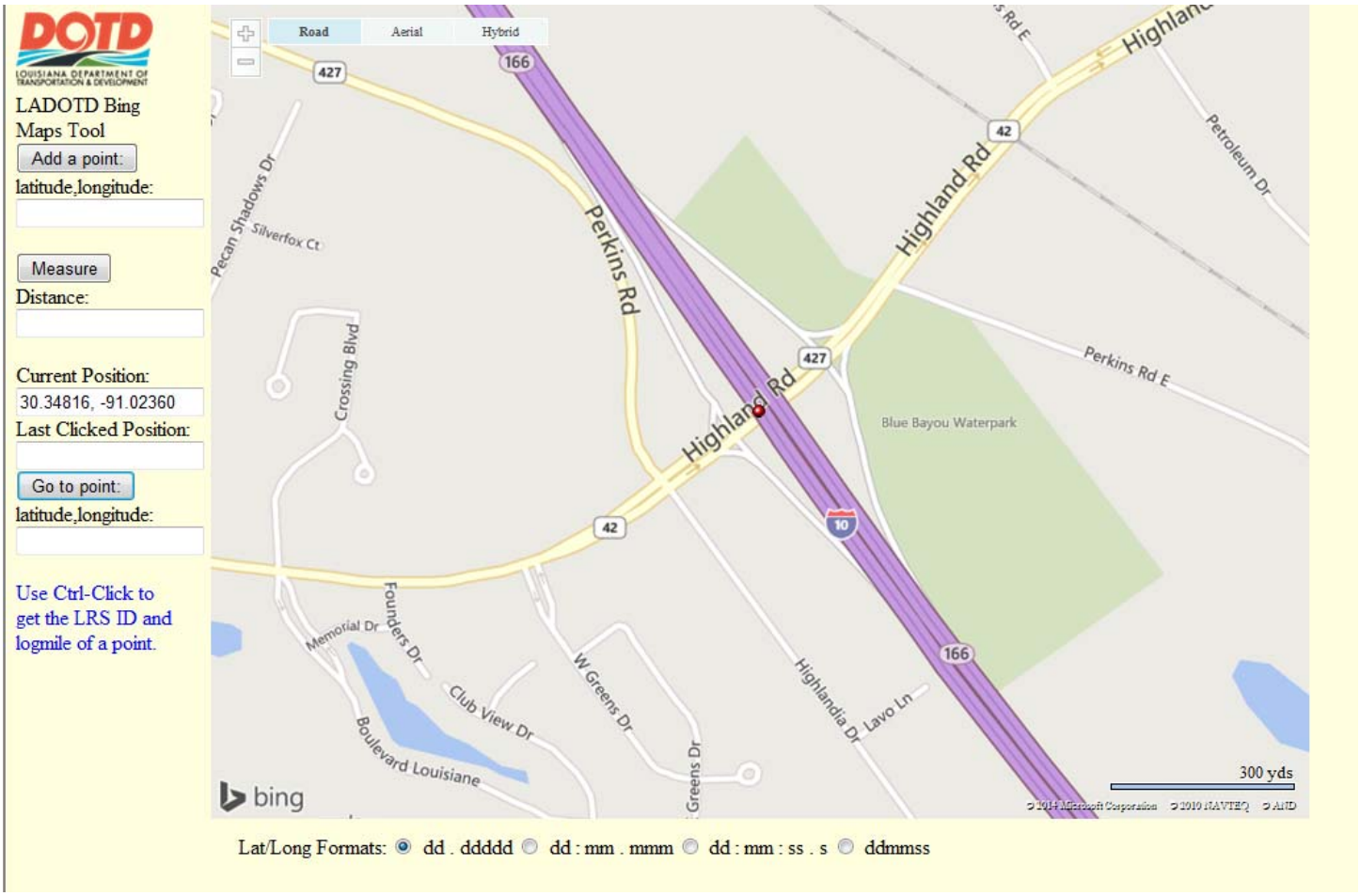


- **Will give you the results, based on coordinates, for all location fields.**

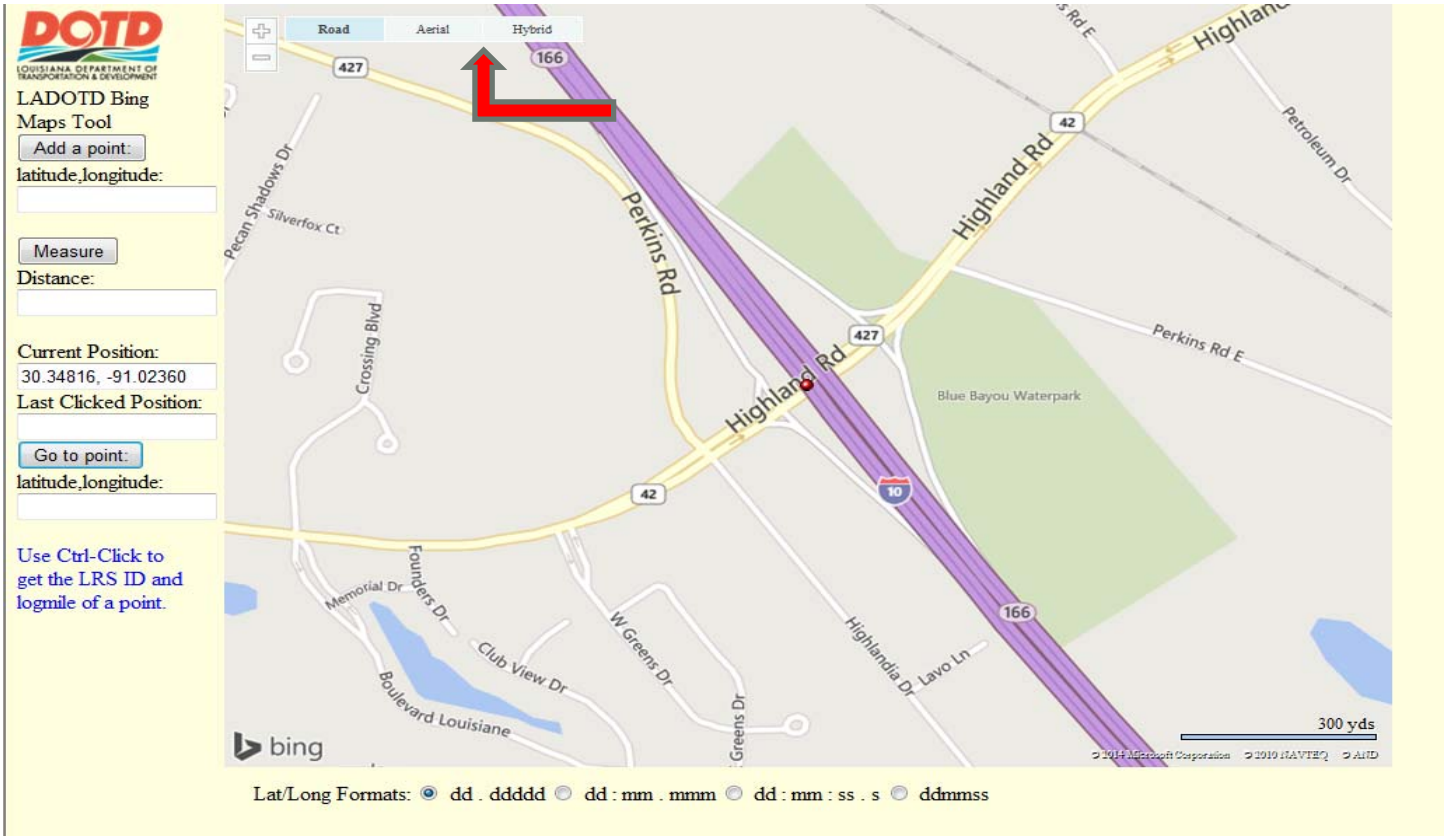


4) CLICK THE MAPPING BUTTON:





5) CLICK THE AERIAL BUTTON THEN THE HYBRID BUTTON:



6) IF YOU HAPPEN TO LOCATE THE CRASH AT THE WRONG COORDINATES YOU CAN GET NEW ONES BY JUST CLICKING THE NEW LOCATION THUS COPY AND PASTE BACK INTO THE LAT./LONG. WINDOW TO GET NEW ROUTE AND MILEPOINT/MILEPOST:

7) ANY QUESTIONS PLEASE CONTACT ONE OF THE FOLLOWING INDIVIDUALS:

For help, call Mike Connors at 225-379-1451 or Jim Chapman at 225-379-4574.

CONFIDENTIAL INFORMATION

This document and the information contained herein is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal aid highway funds; and is therefore exempt from discovery or admission into evidence pursuant to 23 U.S.C. 409.

Contact the LADOTD Traffic Safety Office at (225) 379-1871 before releasing any information.