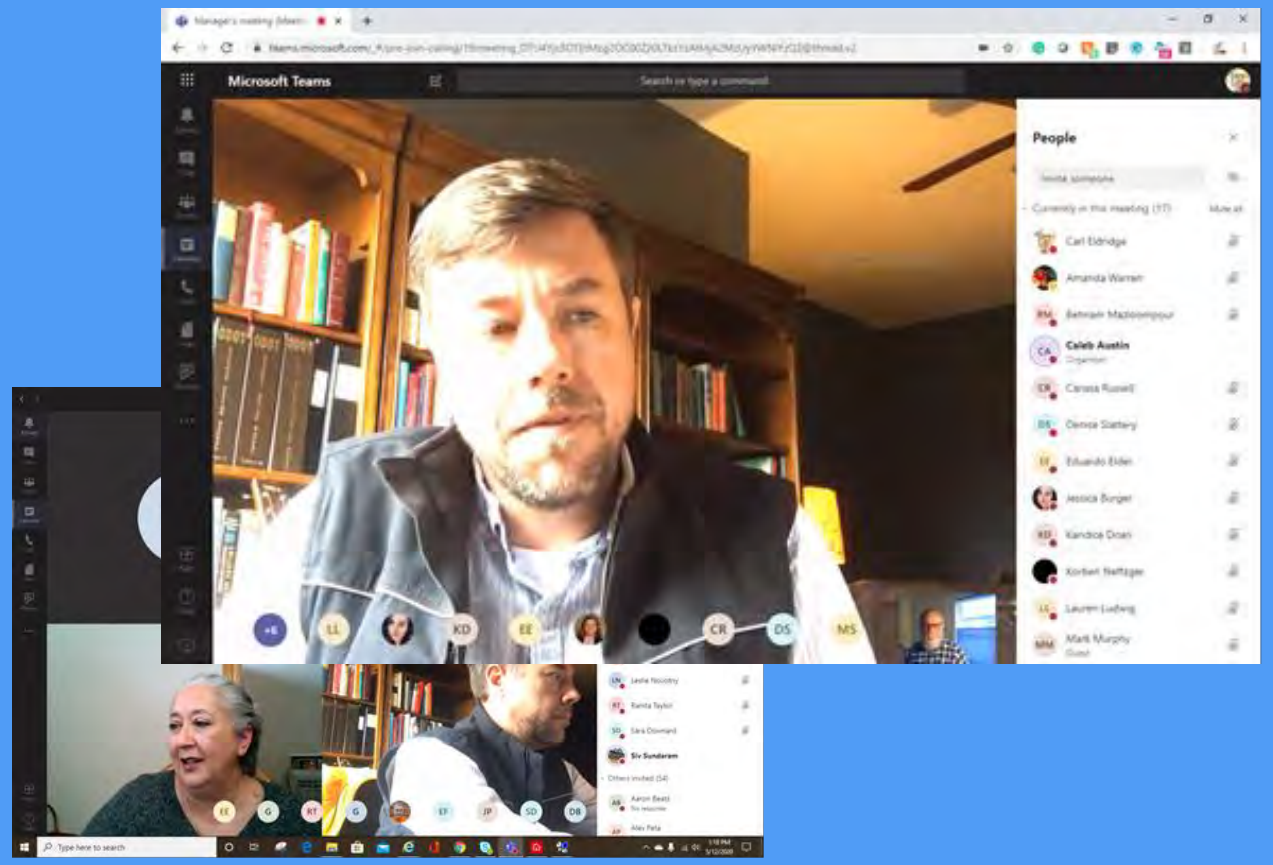
OKLAHOMA Transportation

Microsoft

Office 365

Microsoft Teams

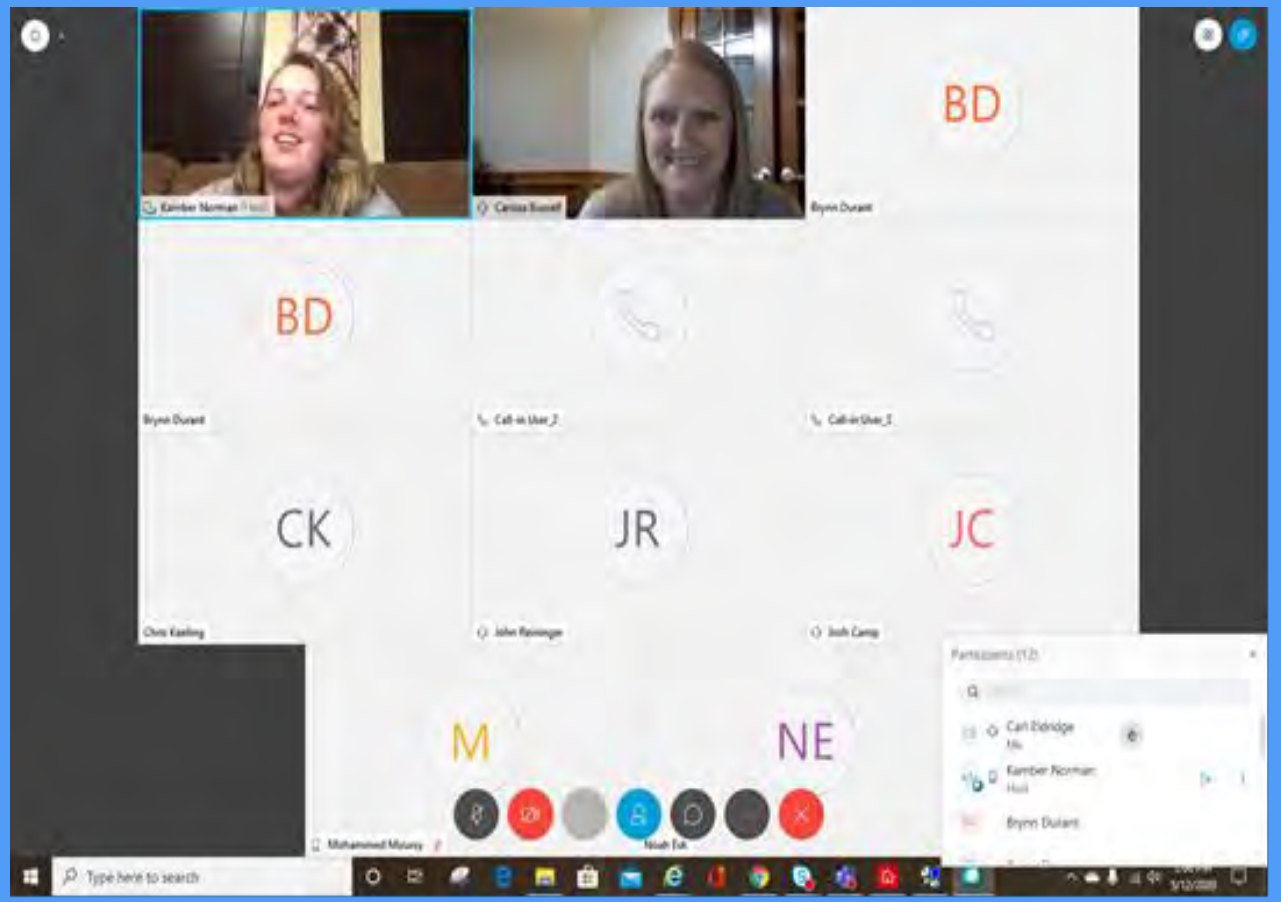
- **TEAMS** – Application that enable us to maintain visual and verbal communication with our managers and staff
- We can share documents and have meetings on the fly
- It also gives us access to other group meetings throughout the Department



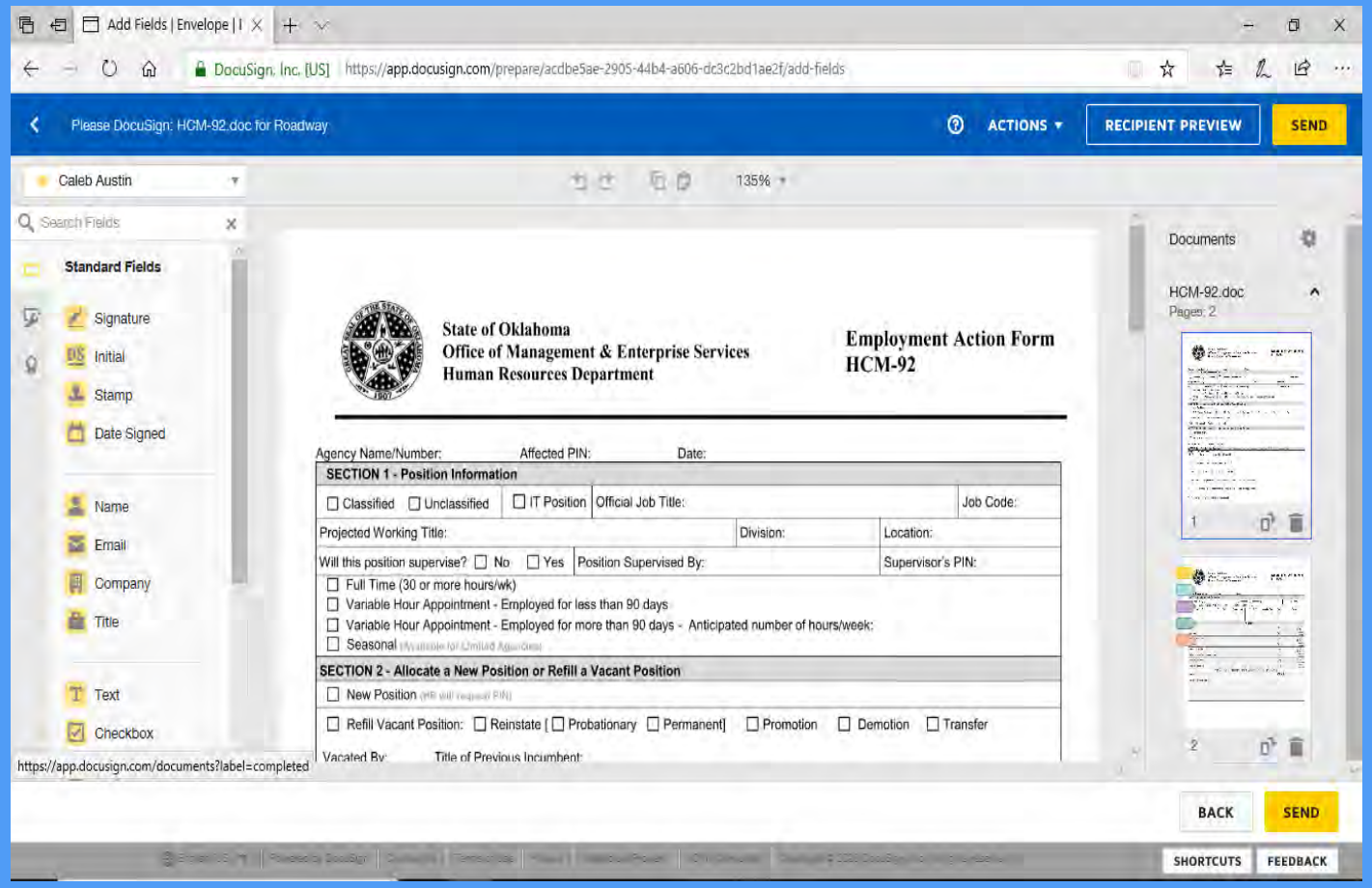
Cisco Webex

Software company

- **Webex** – Virtual meeting room that allow outside participants to collaborate and can be used with “Purple” to assist us in communicating with our members that require ASL interpreting services



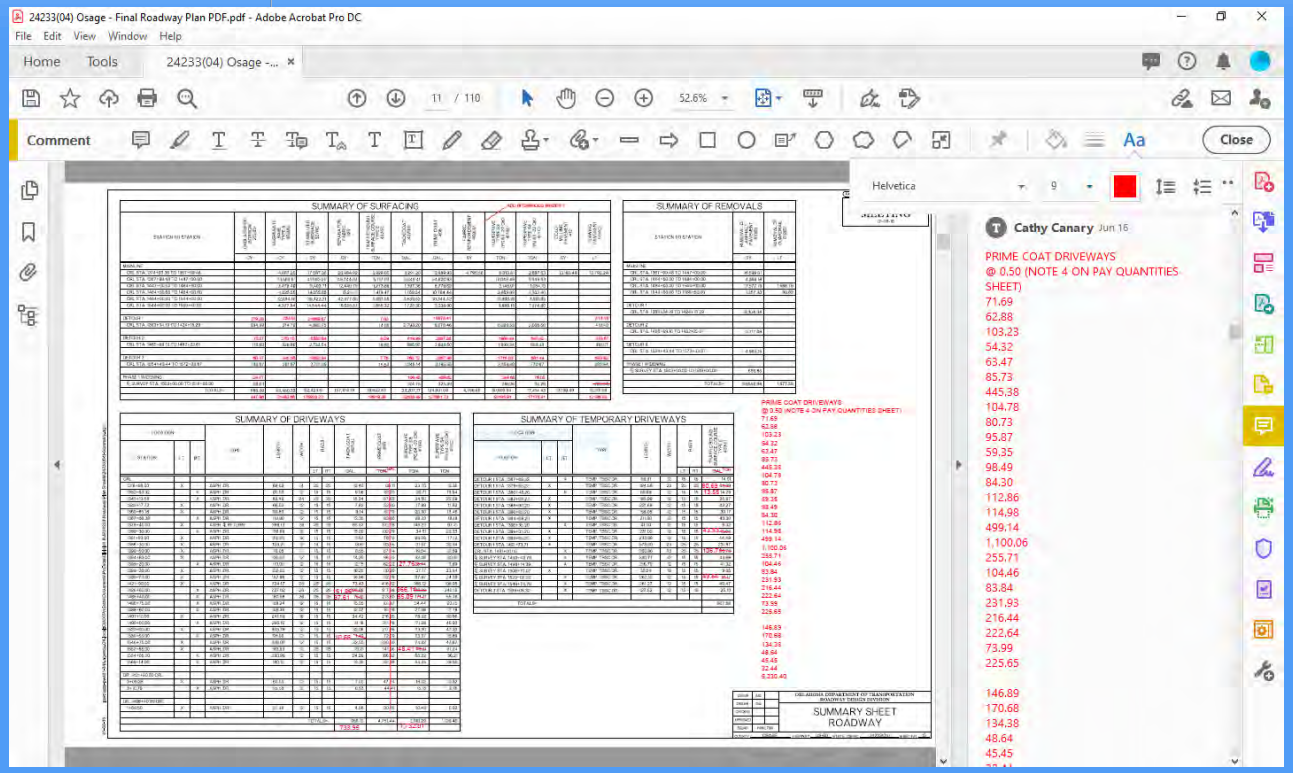
- **DocuSign –** Application that gives a secure way to sign and get documents signed digitally. It can be used in the office or remotely from a phone, tablet, laptop or desktop computer
- It has streamlined ODOT's ability to move documents through the approval process



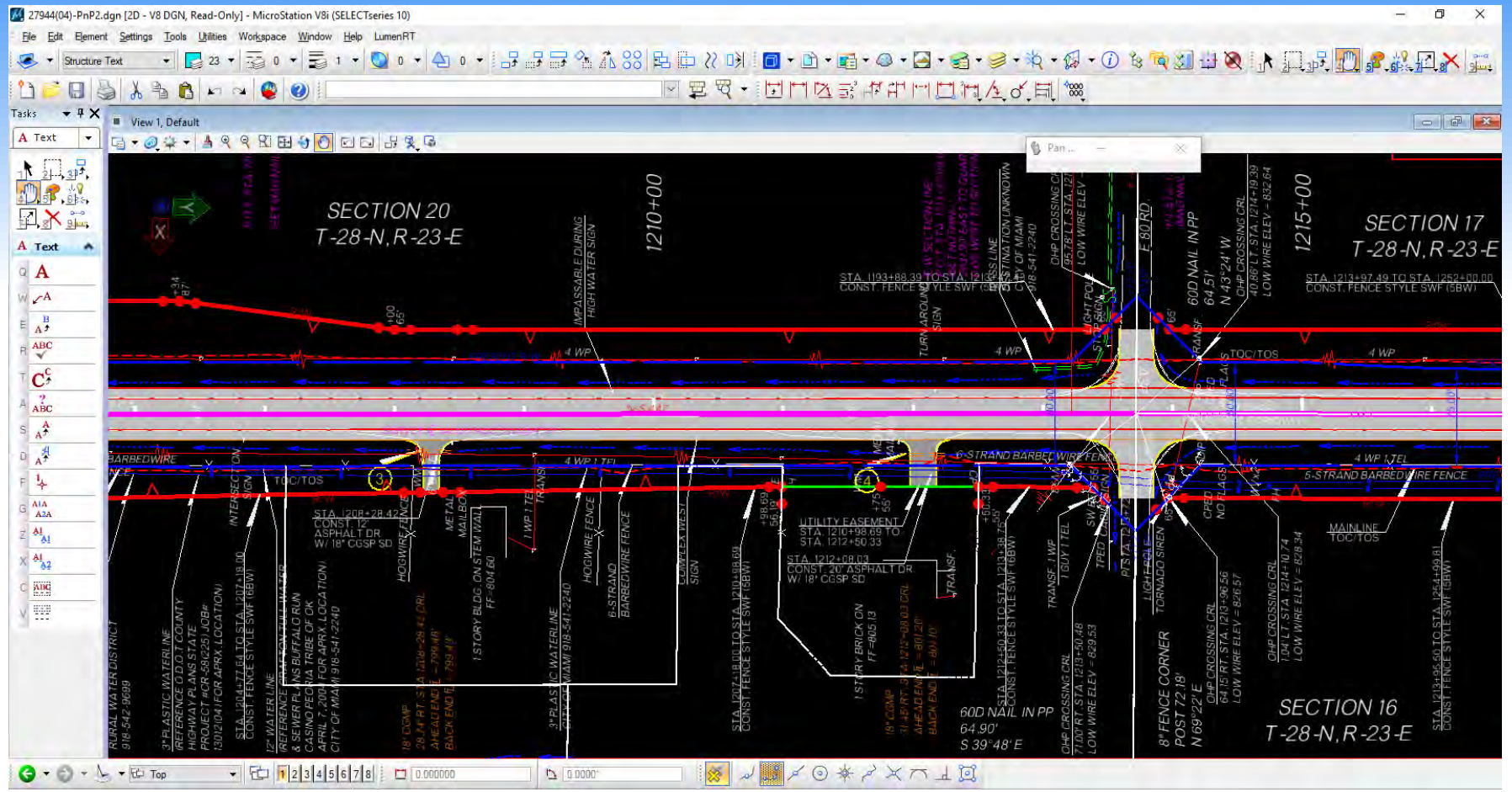
Adobe Creative Cloud

Acrobat Pro

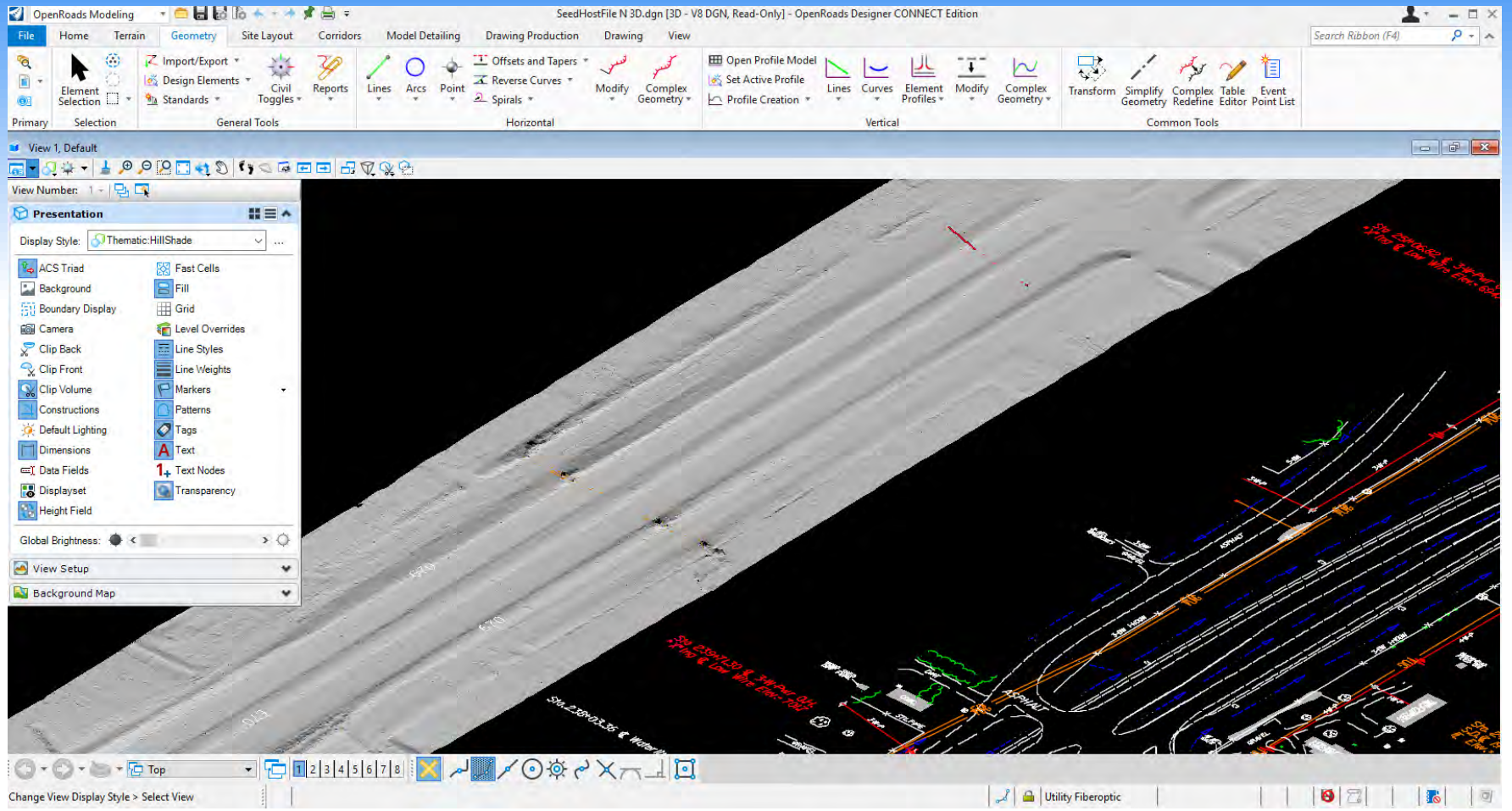
- **Acrobat Pro** – With PDF being our standard deliverable format, we use this application for sharing and redlining
- It has reduced the need for printing paper copies



- **MicroStation** >> **Connect** – CADD (Computer Aided Drafting Design) standard digital platform to create 2D/3D Models for design plans

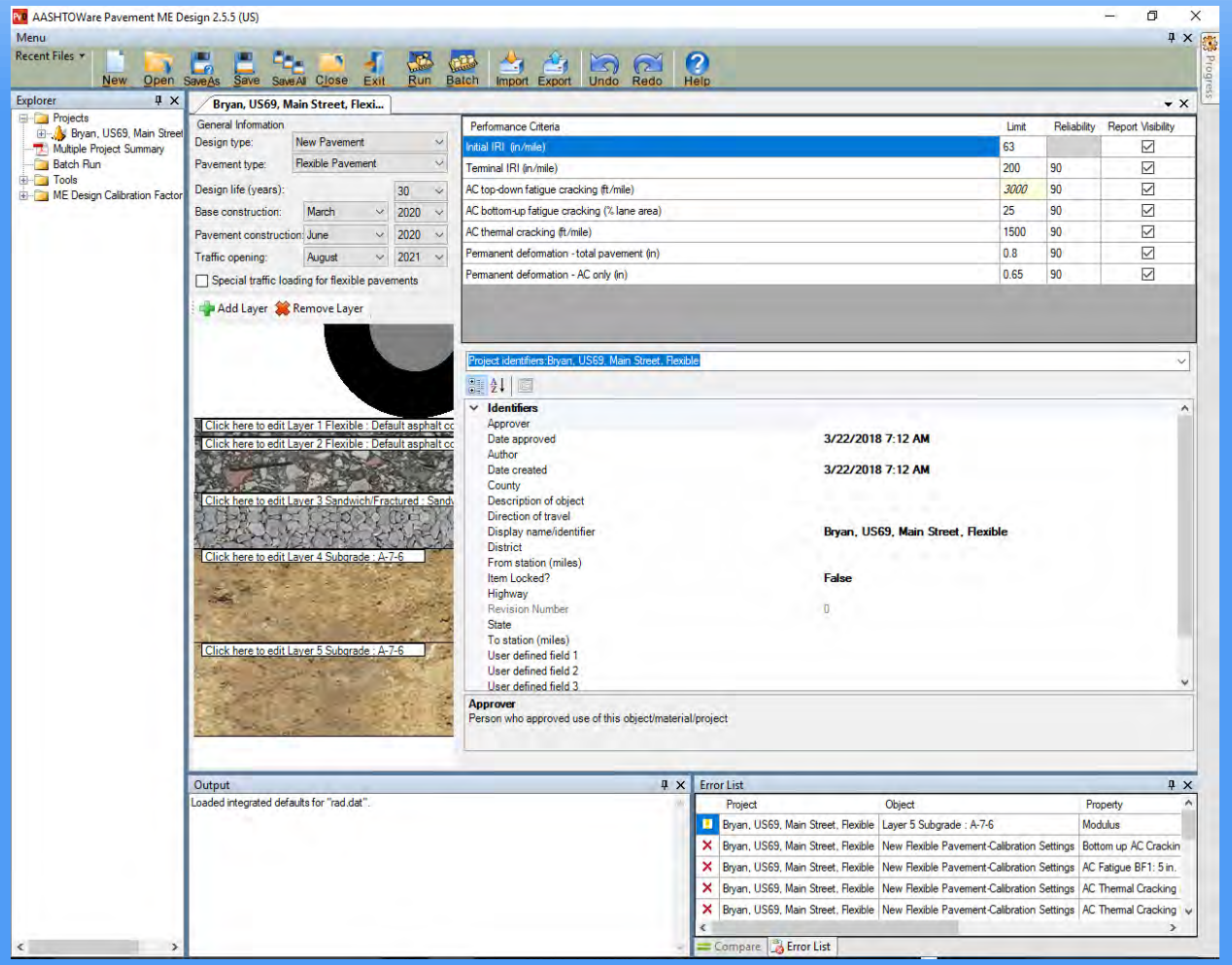


- **InRoads** >> **OpenRoads** – Civil design application package that creates intelligent data within the digital platform of our 3D roadway models



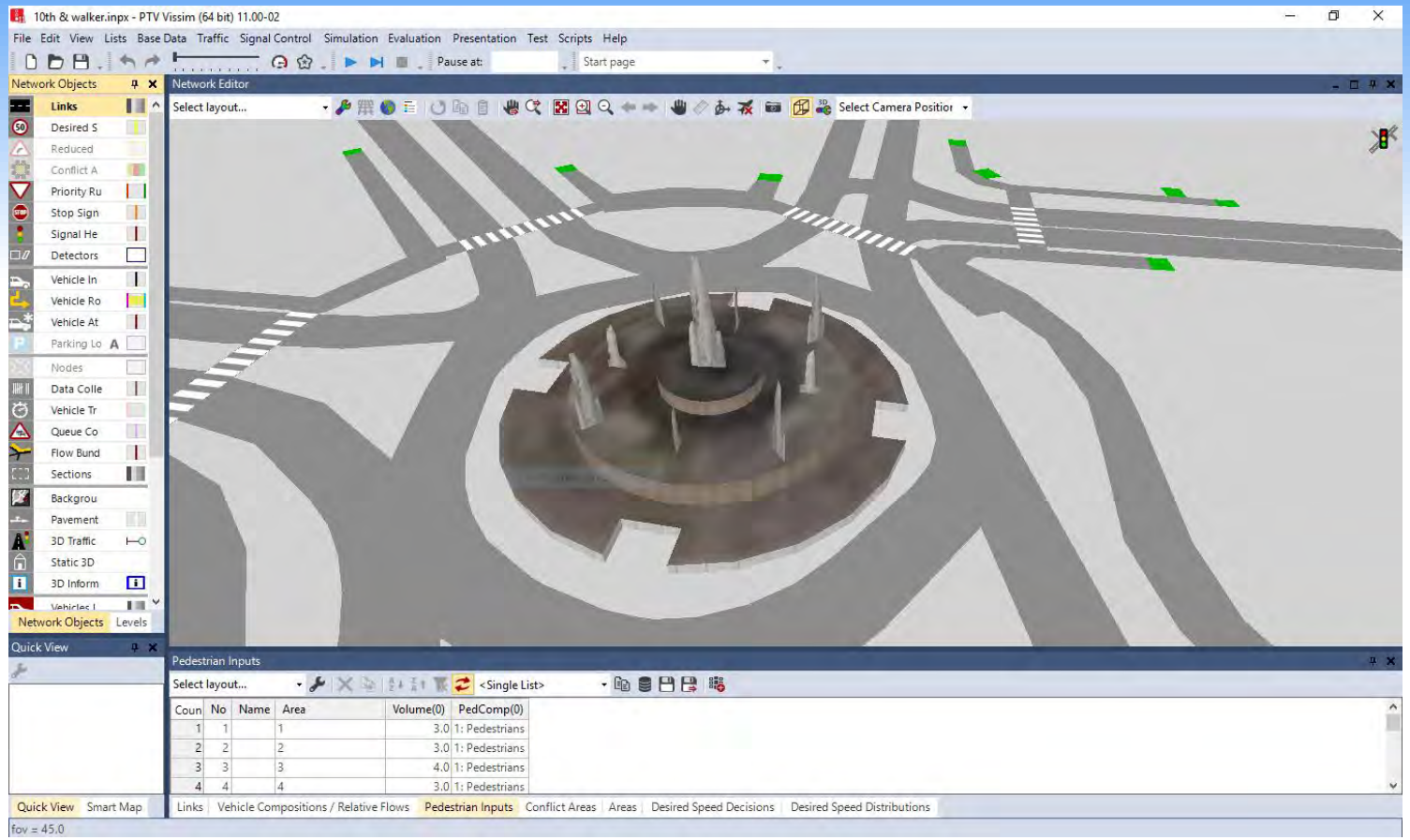
- **ConceptStation** – Design application that creates a visual presentation of the proposed designs using our civil design data

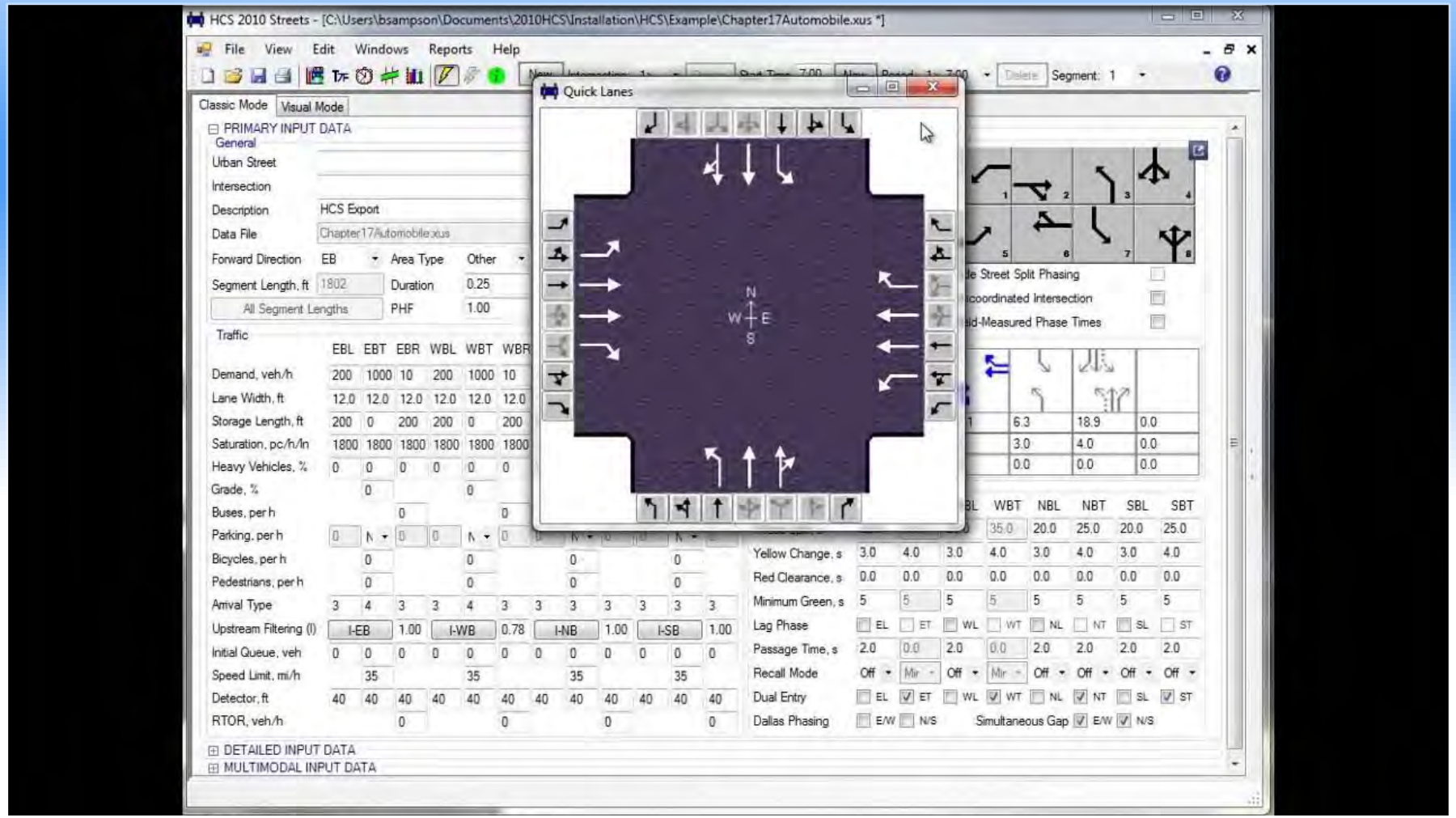
- **Pavement ME** – Used to calculate pavement responses (stresses, strains, and deflections) and combines them with other pavement, traffic, climate, and materials parameters to predict the progression of key pavement distresses and smoothness loss over time



PTV VISSIM

- **PTV VISSIM**– Used for traffic planning and traffic simulation, for making informed decisions about potential improvement projects and weighing the benefit any scenario



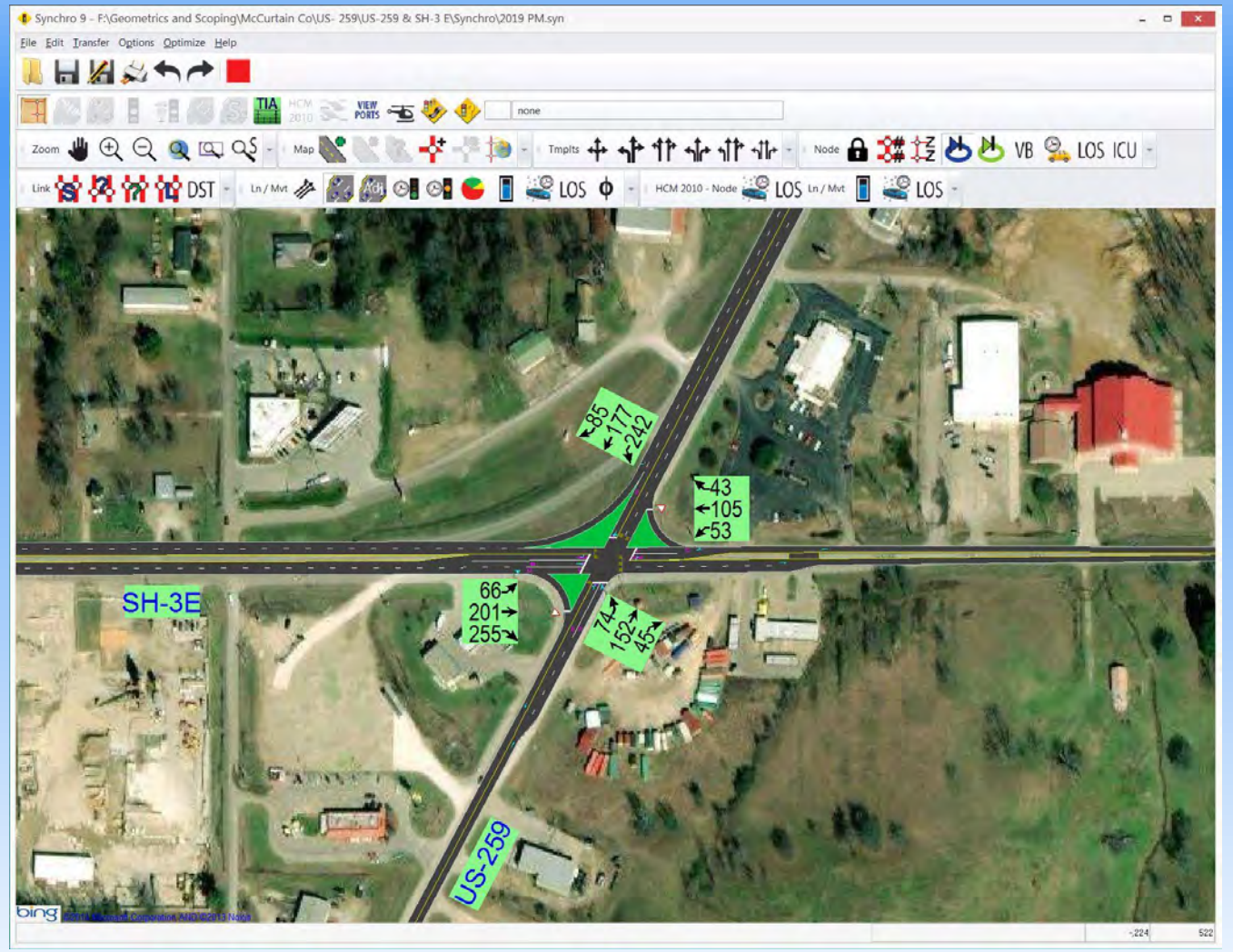


HIGHWAY CAPACITY SOFTWARE

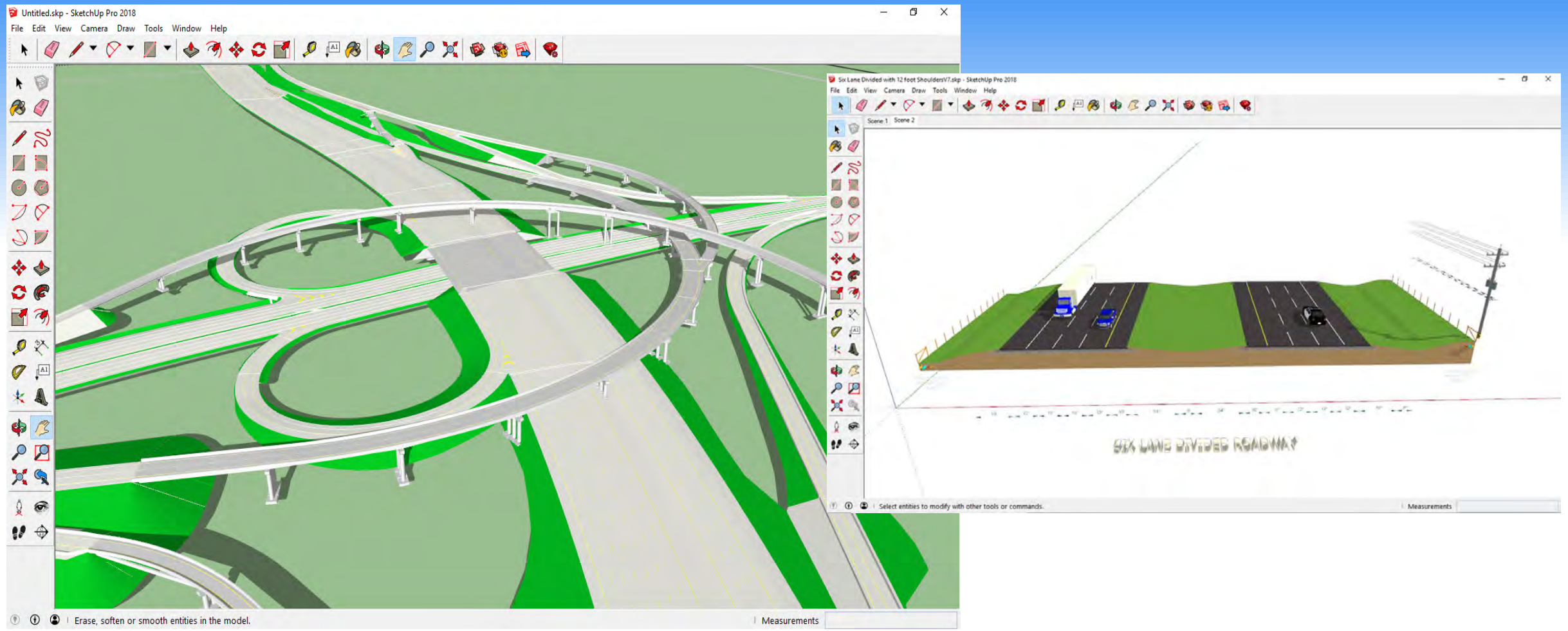
This program is used in operations for traffic modeling and turning movements.

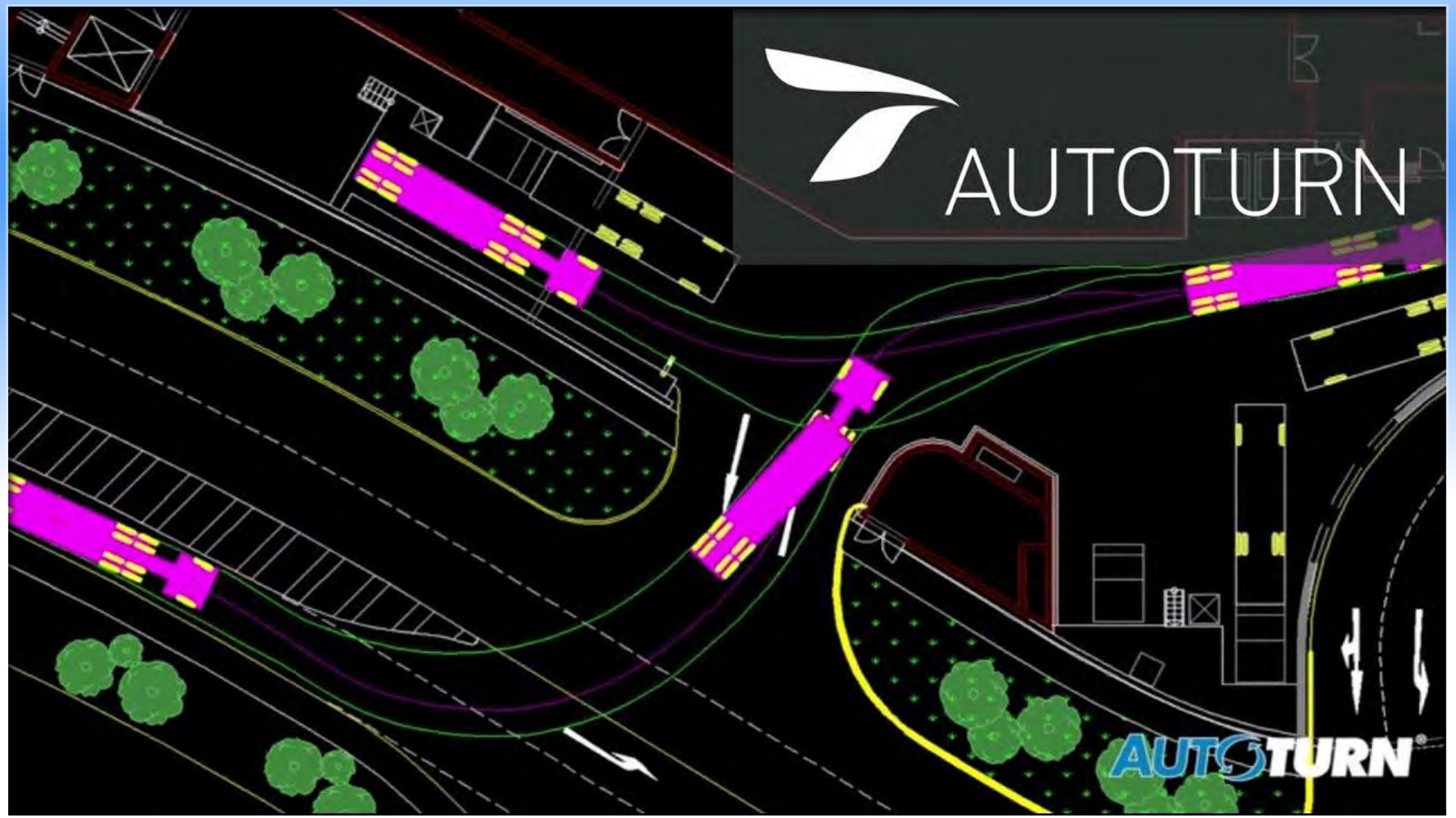
Trafficware

- **Synchro** – Traffic signal timing application that helps Traffic Engineers and transportation planners design, model, optimize, simulate, and animate signalized as well as un-signalized intersections (including roundabouts)



- **Sketchup** – Utility that bridges several of the applications we use, It assists in the creating of visual 3D models with ease

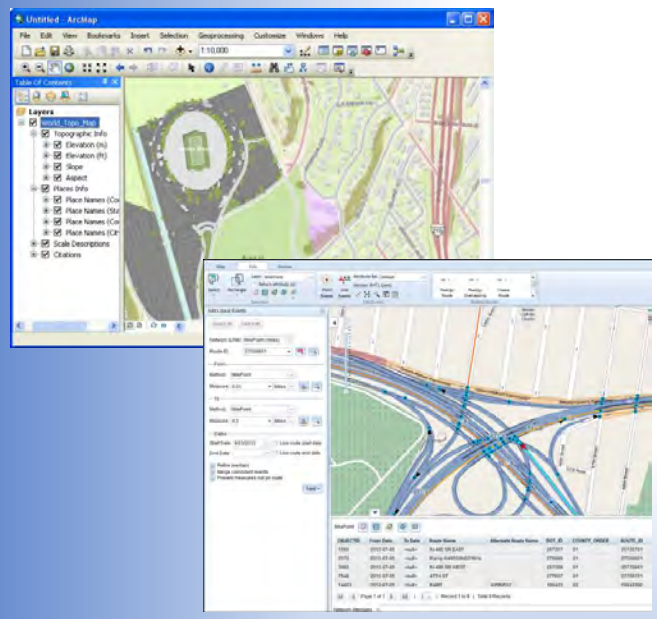




AUTOTURN

This is used to verify all turning movement can be made comfortably in any intersection modifications.

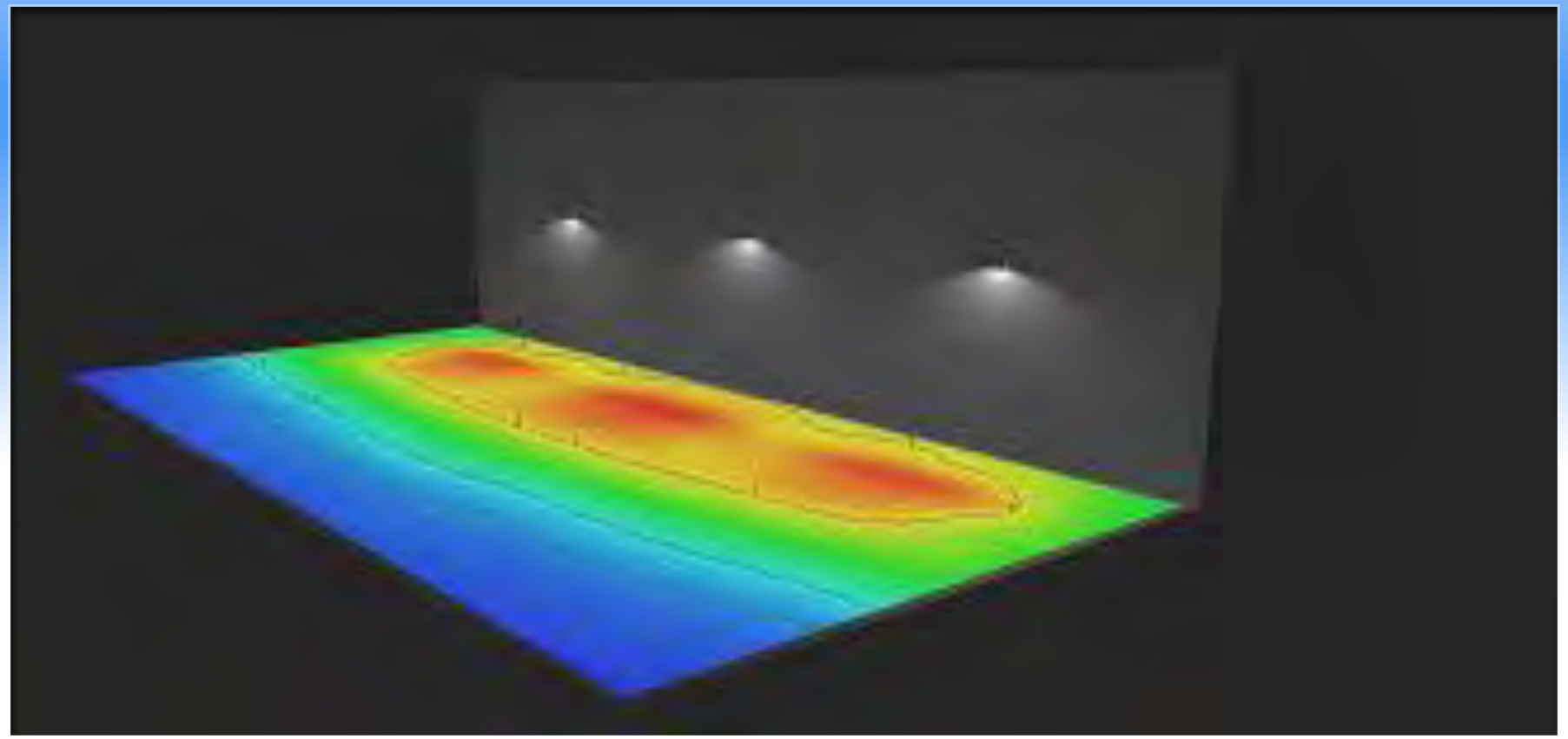
GIS – In the Office



- EsriArcGIS software for maps and analytics
  - Agency's geospatial data starts here
  - Wide range of capabilities
  - Industry Standard
- Esri Roads & Highways software for roadway & LRS management
  - Easy downstream third-party integration (Agile Assets, Deighton, etc.)
  - Better data quality controls
- Transcend transportation data suite
  - Significantly streamlined HPMS submittal
  - Straight line diagramming

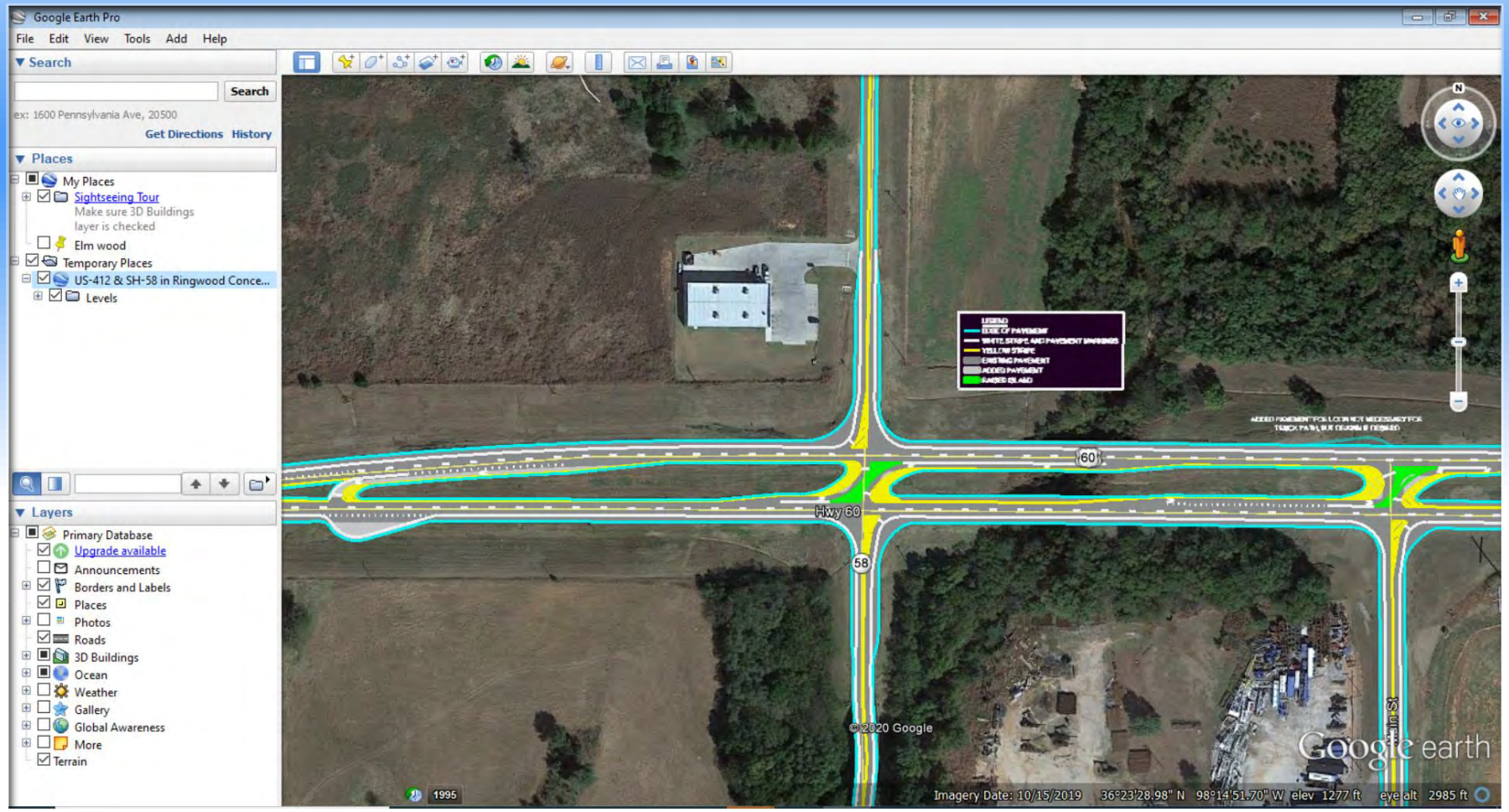
Other Applications

- Travel Demand Modeling
  - Virtual network & flow modeling
- Deighton dTIMS
  - Manage pavement data
  - Analytics of deterioration, costs, etc.
- Oracle databases
- Heat maps
  - Recognize areas of interests based on performance factors



VISUAL

Used for photometric design for illumination projects.

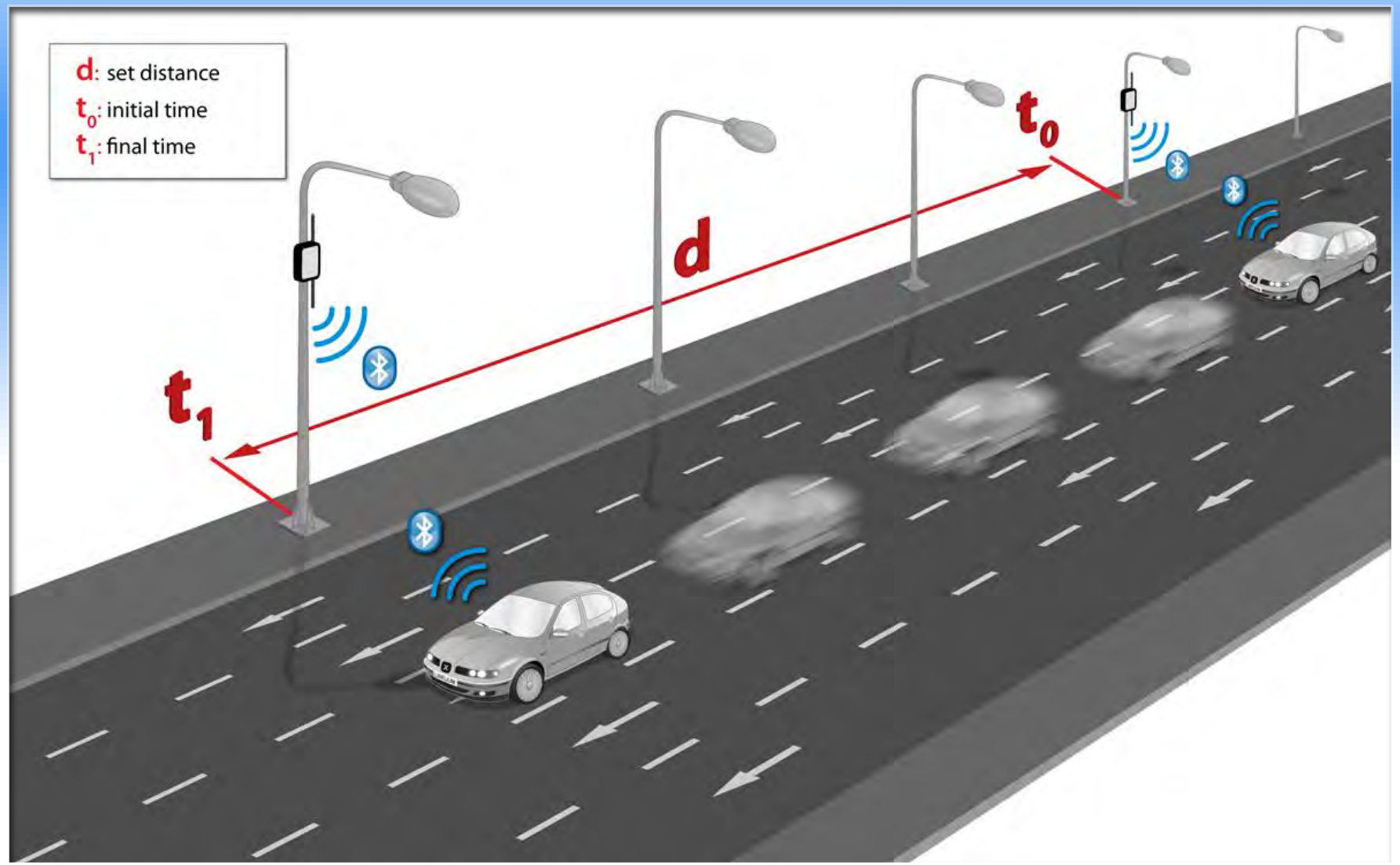


GOOGLE EARTH PRO

This is used to develop and show thoughts and ideas to field division about possible solutions for multiple issues.

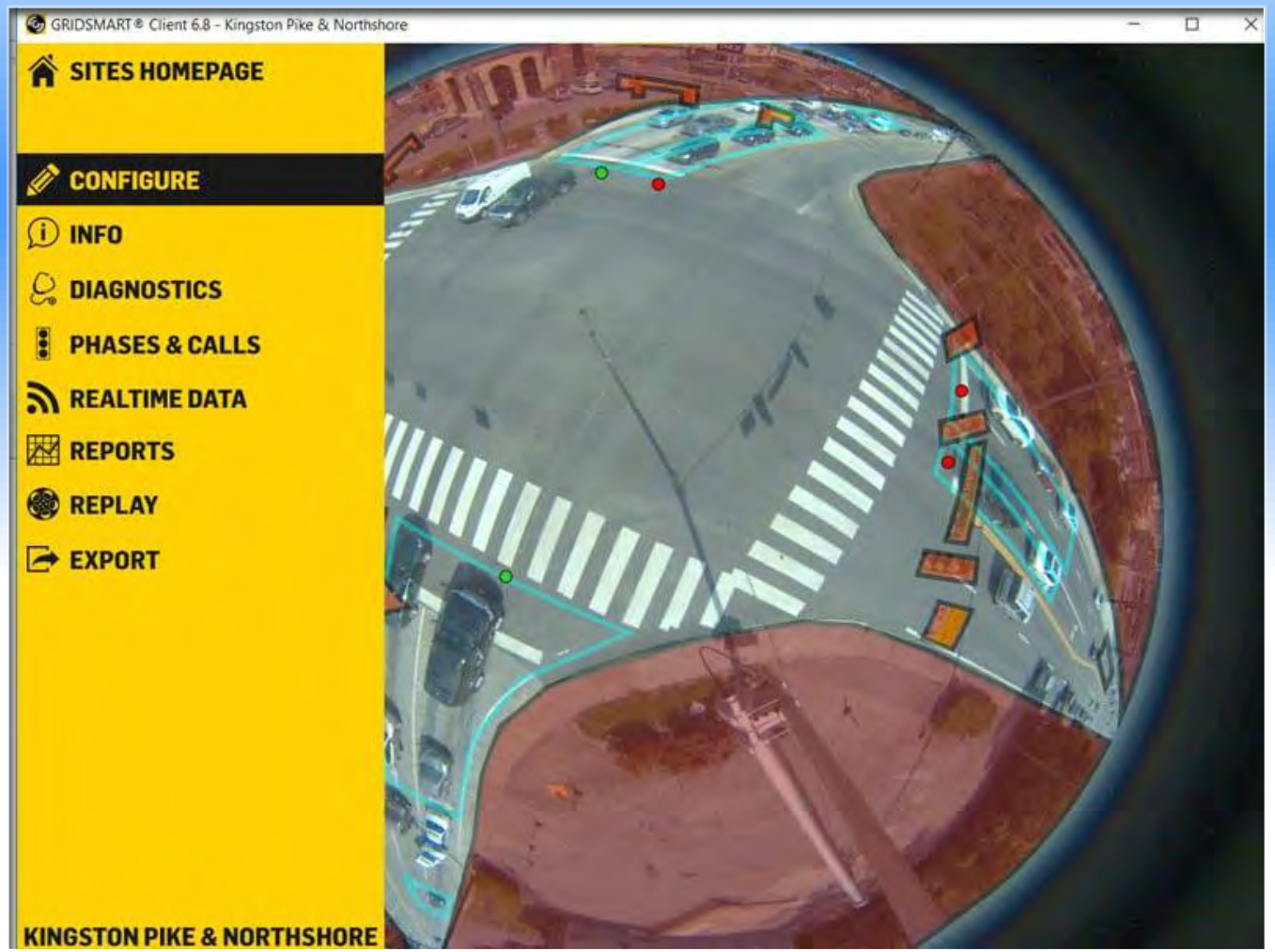
PORTABLE MESSAGE SIGNS

Used to relay messages in work zones especially with smart work zones.



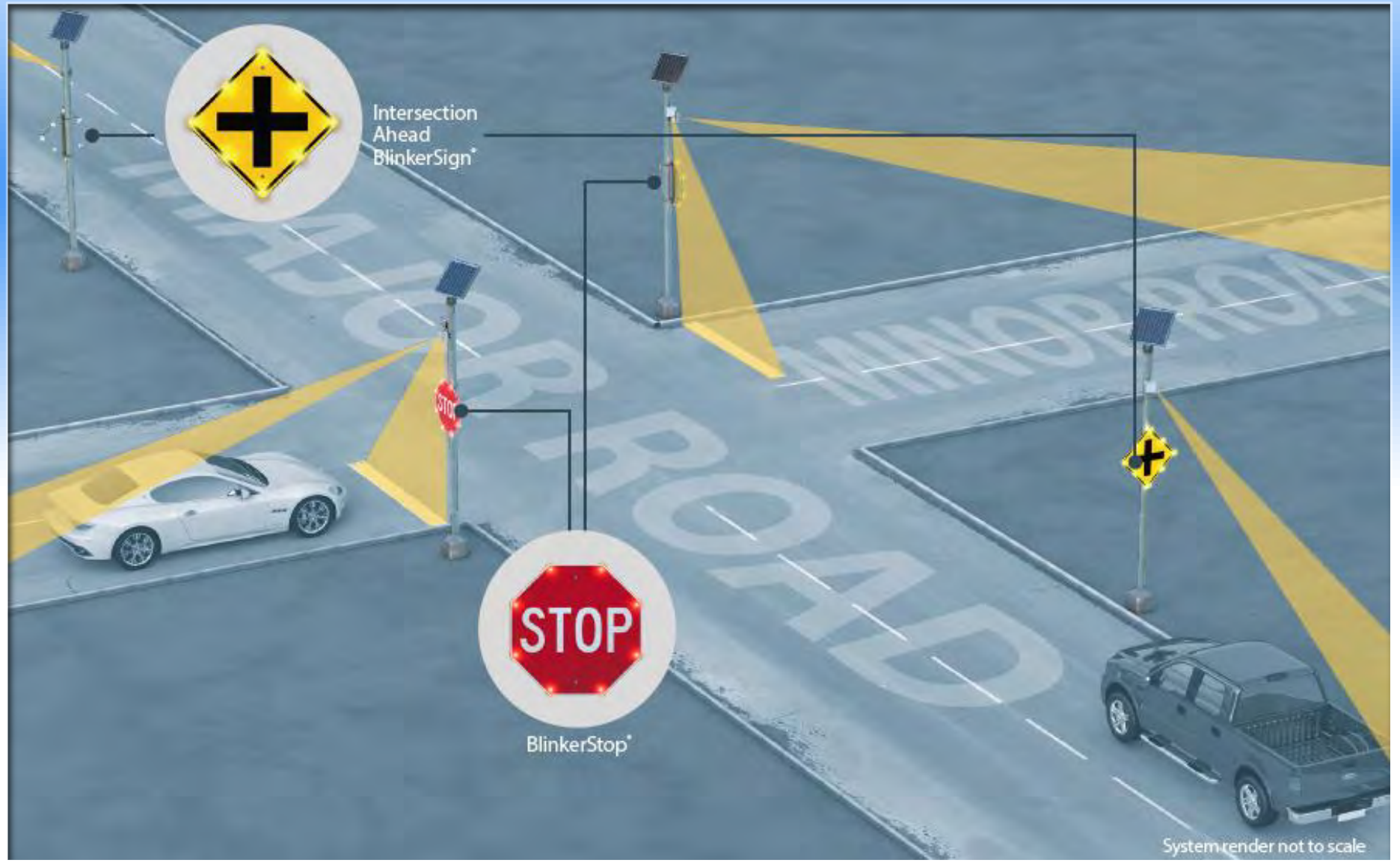
BLUETOOTH SENSOR

Bluetooth sensors can be used to calculate speeds, travel times and congestion relief via travel time information.



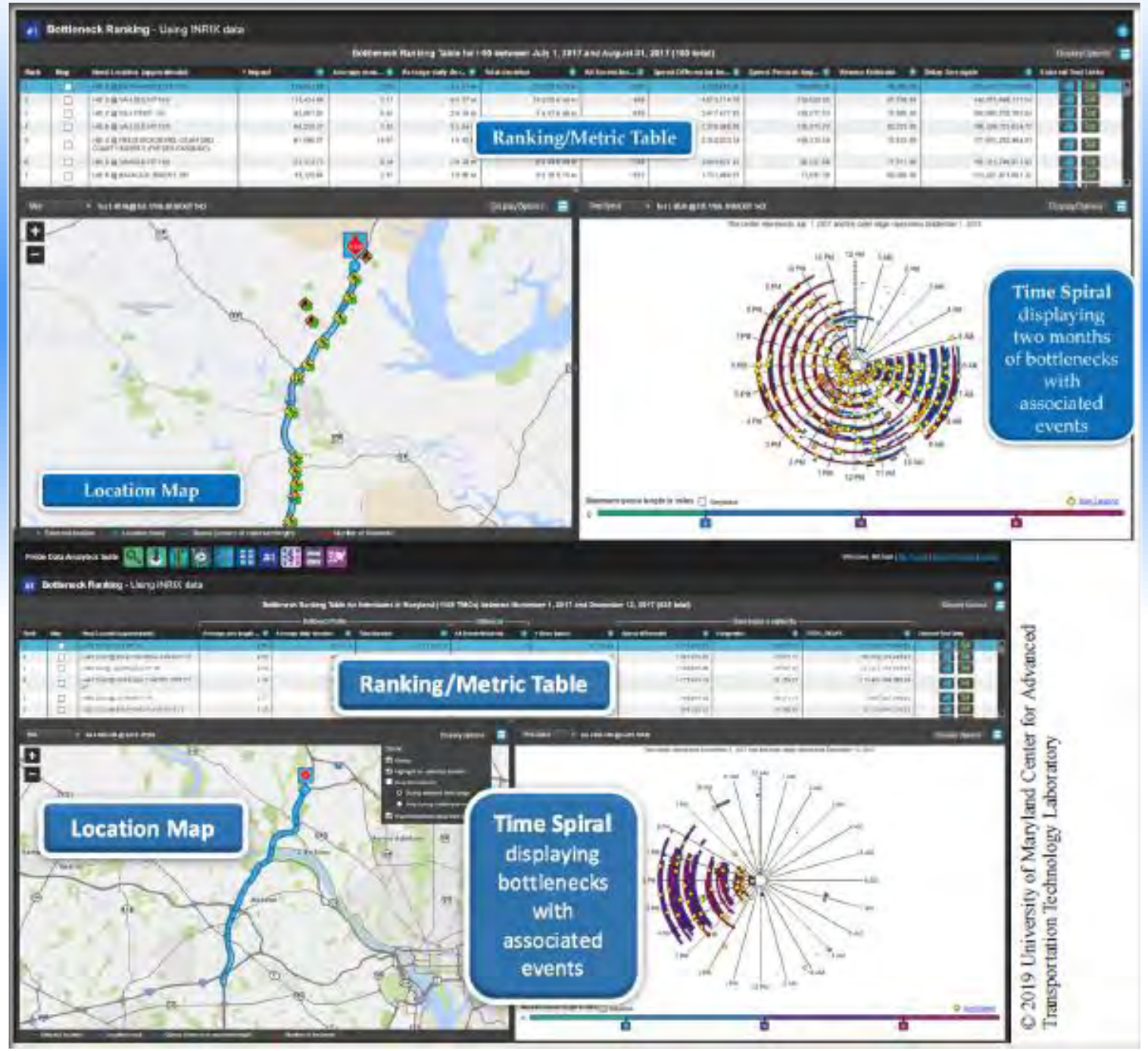
GRIDSMART TRAFFIC SIGNAL SYSTEM

We use this product for signal detection and real time year long traffic counts and turning movements at these signal locations.



INTELLIGENT WARNING SYSTEMS

Intelligent warning systems only flash when a potential conflict is present .



WAZE PROBE DATA

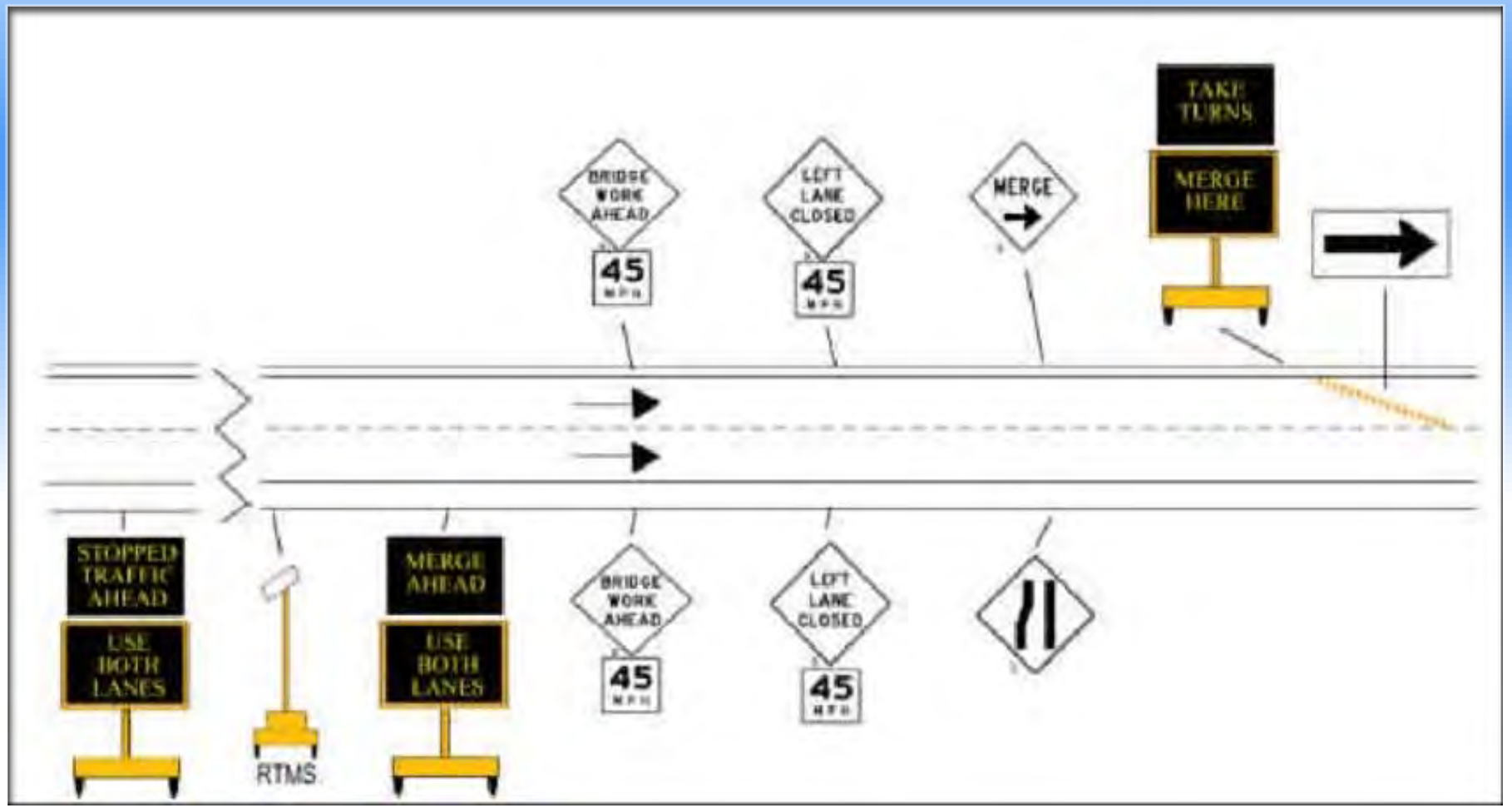
Offers us the ability to verify and check sensor collection data.

DRIVEWAY ASSISTANTS DEVICE

These will allow a reduction in cost by eliminating temporary signals at driveways.

CONNECTED VEHICLE TECHNOLOGIES

These will allow a reduction in cost by eliminating temporary signals at driveways.

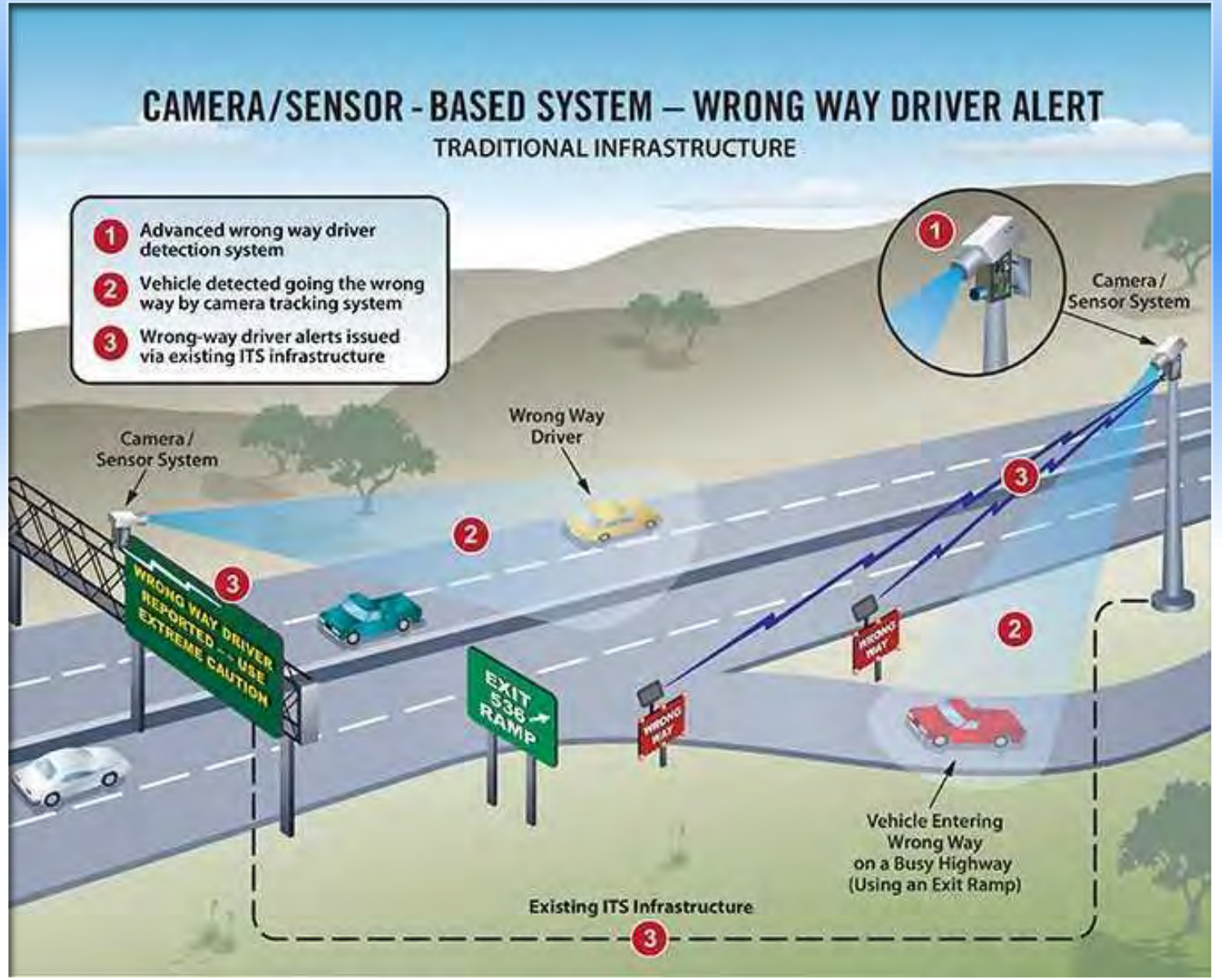


DYNAMIC LATE MERGE

This lets us reduce queue lengths and avoid some secondary incidents.

SOLAR POWERED LIGHTING BATTERY AND NET METERING

With copper theft and maintenance concerns solar lighting maybe a tool that can help with both problems. The system shown is a retrofit system that will work on any existing pole.



WRONG WAY DETECTION AND MITIGATION

FIELD EQUIPMENT

GNSS RTK Network Station

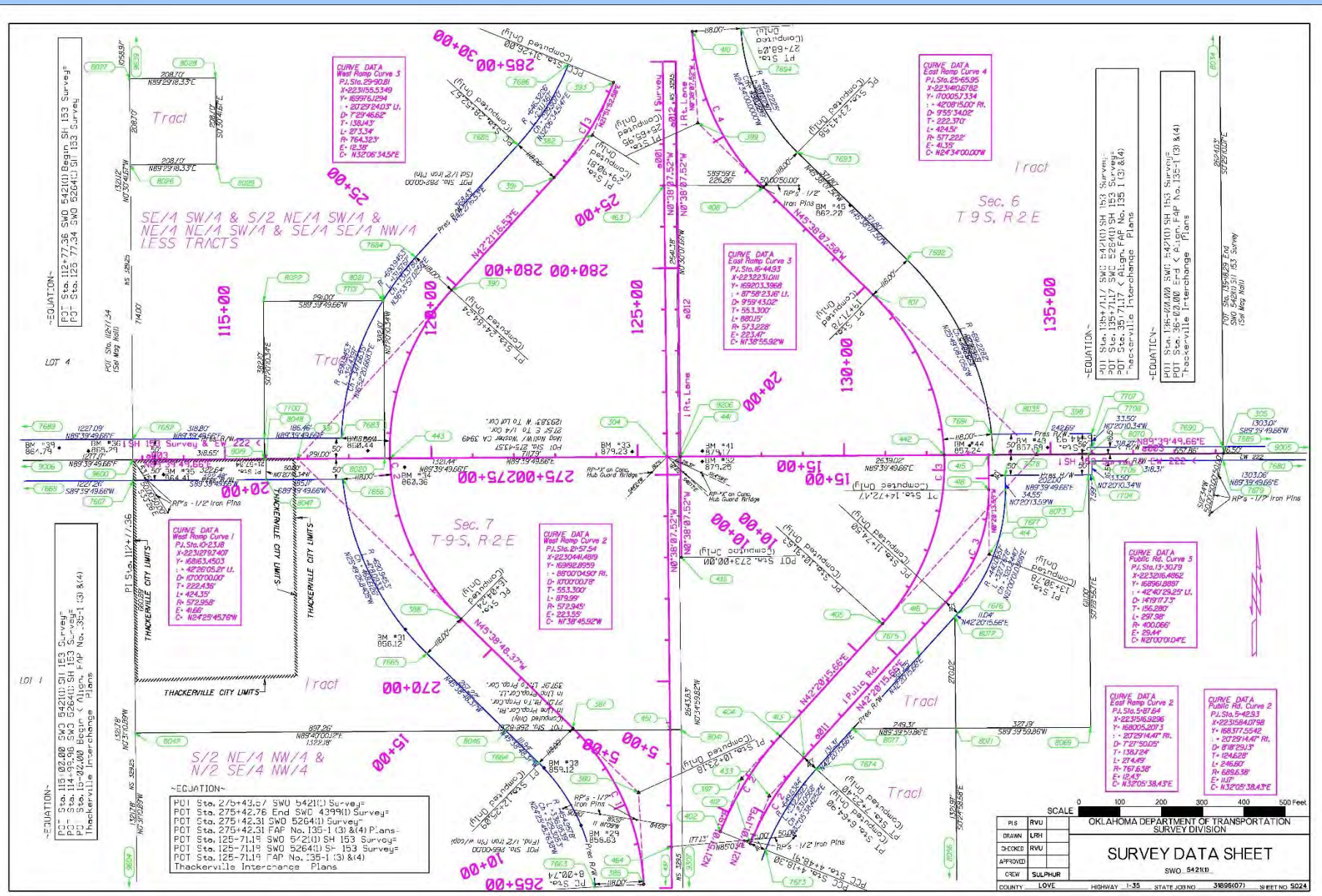
Multi-Station 60

GPS/RTK Base Station

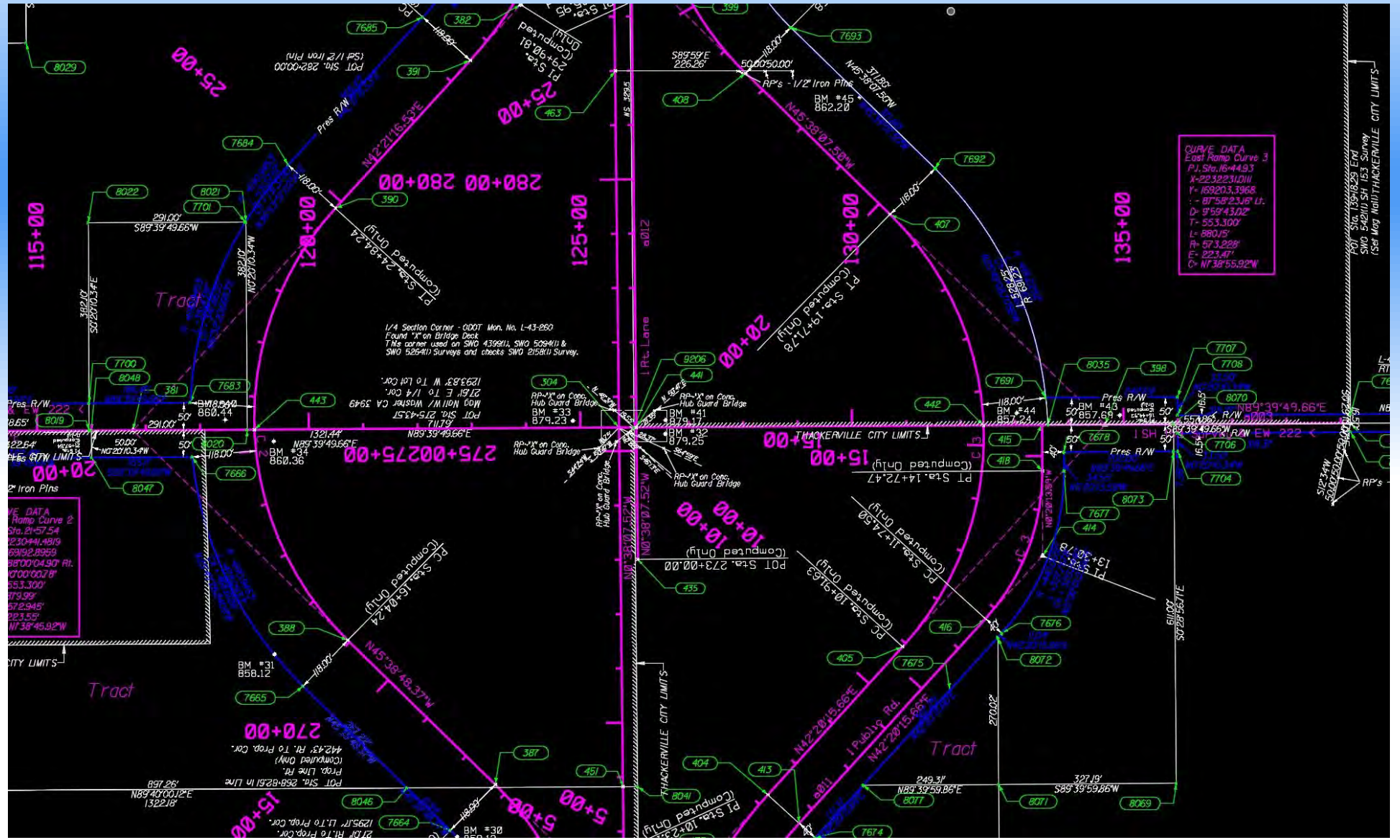
GPS/RTK Rovers

Digital Level

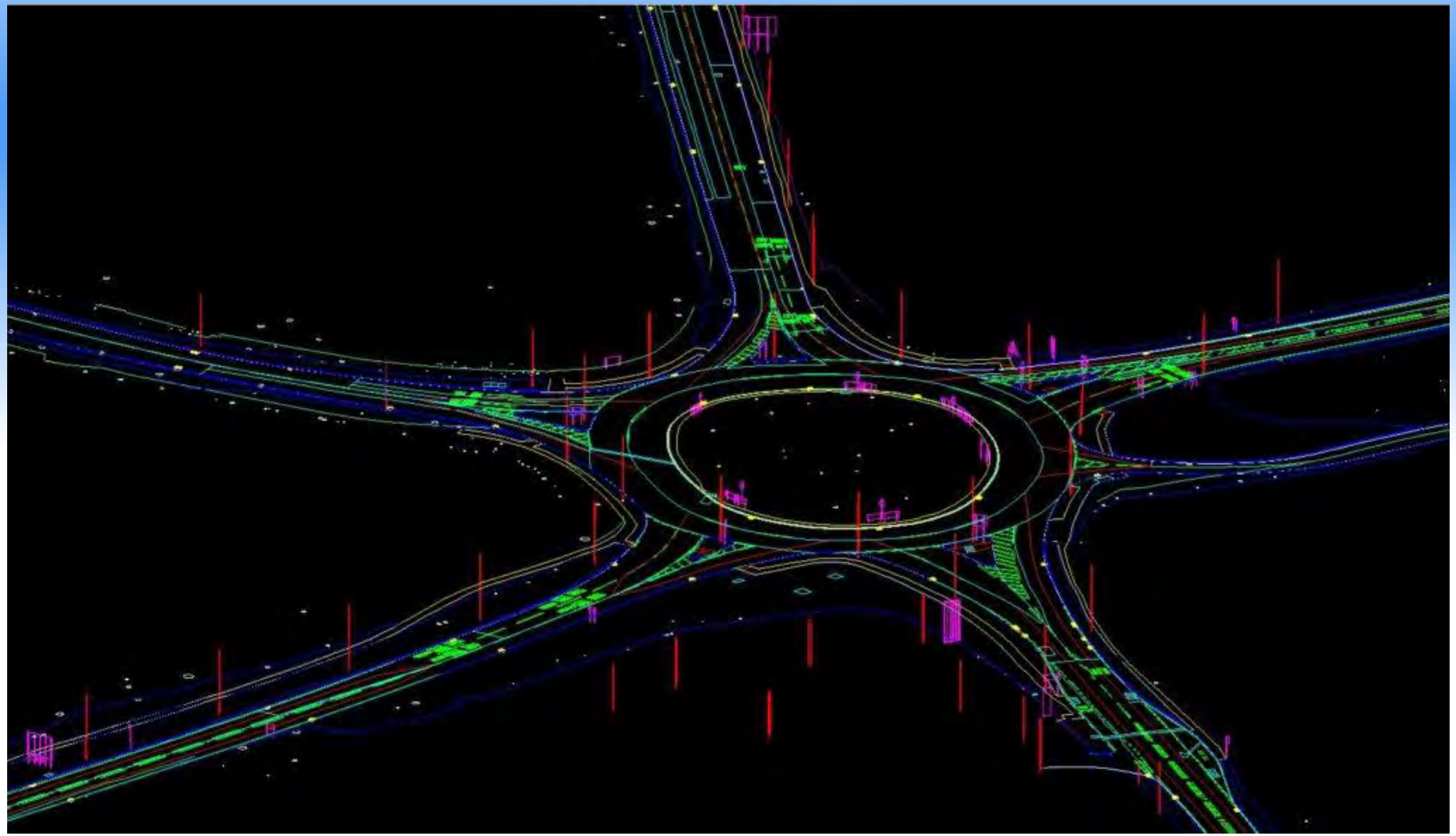
Once edited graphically the Survey is approved and sheet files are created in the Adobe Acrobat format



Once edited the Coordinate file is imported into MicroStation via InRoads

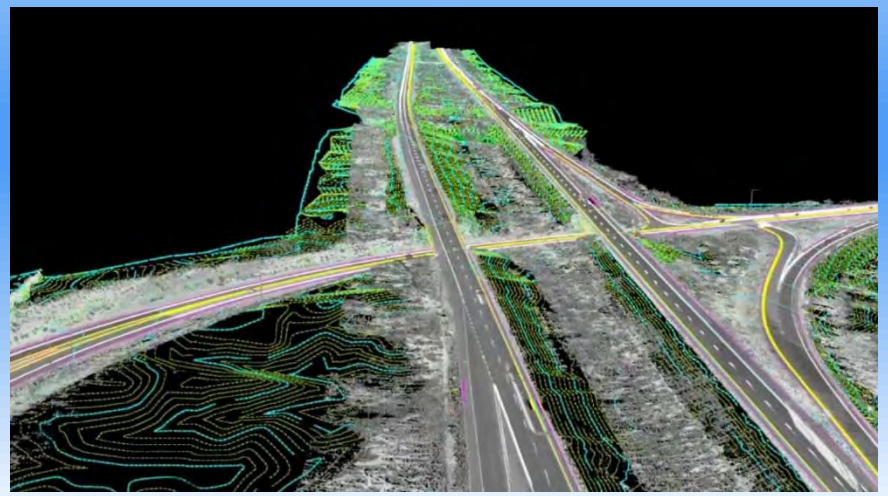

THACKERVILLE CITY LIMITS
Tract
Pres R/W
I Rt. Lane
I Public Rd.
BM #41
879.11
BM #32
879.25
BM #33
879.23
BM #34
860.36
BM #45
862.20
BM #43
857.69
BM #44
857.24
BM #31
858.12
BM #30
I/4 Section Corner - CDOT Mon. No. L-43-260
Found "X" on Bridge Deck
This corner used on SWO 4399(1), SWO 5094(1) &
SWO 5264(1) Surveys and checks SWO 2158(1) Survey.
CURVE DATA
East Ramp Curve 3
P.I. Sta. 16+44.93
Y= 169203.3968
D= 9°59'43.02"
T= 553.300'
L= 880.15'
R= 573.228'
E= 223.47'
CH= N7°38'55.92"W
(Computed Only)
Pt Sta. 14+72.47
Pt Sta. 19+71.78
Pt Sta. 24+84.24
Pt Sta. 29+90.81
POT Sta. 282+00.00
(Set 1/2" Iron Pin)
POT Sta. 139+18.29 End
SWO 5421(1) SH 153 Survey
(Set Mag Nail) THACKERVILLE CITY LIMITS
N89°39'49.66"E
S89°39'49.66"W
N89°39'59.86"E
S89°39'59.86"W
N89°40'00.12"E
N45°39'48.37"W
N45°39'07.52"W
N42°20'15.66"E
S89°59'E
226.26'
Pt Sta. 273+00.00
Pt Sta. 10+51.63
Pt Sta. 13+30.78
Pt Sta. 15+74.50
Pt Sta. 16+04.24
Pt Sta. 20+57.54
Pt Sta. 21+43.57
Pt Sta. 25+43.57
Pt Sta. 26+82.61 In Line
Prop. Line Ft.
(Computed Only)
442.43' Rt. To Prop. Cor.
1295.17' Lt. To Prop. Cor.
1321.44'
1322.18'
249.31'
327.19'
291.00'
S89°39'49.66"W
N0°20'10.34"W
S0°20'10.34"E
382.10'
382.10'
270.00'
270.00'
Iron Pins
CITY LIMITS
RP's - 1/2" Iron Pins
RP-"X" on Conc. Hub Guard Bridge
50.00'
50.00'
118.00'
118.00'
118

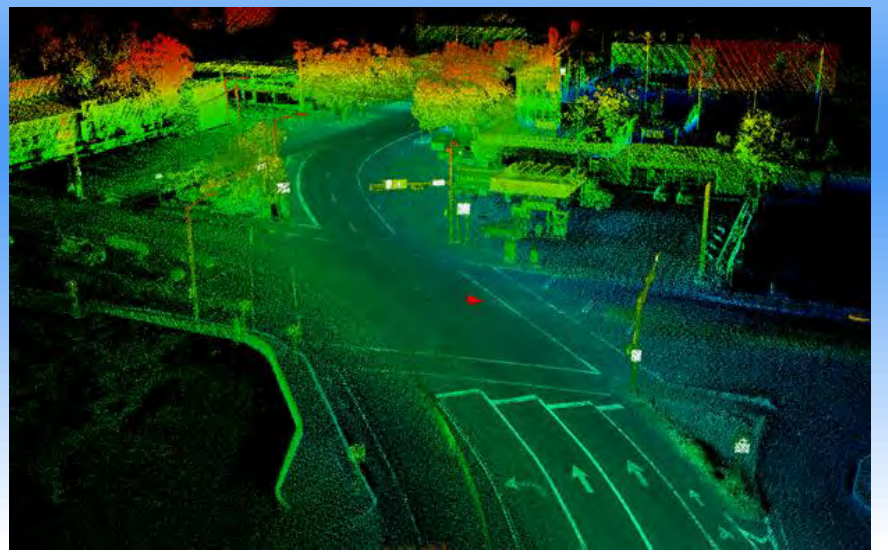
From the point cloud line work is generated and readied for inclusion with the master Design File

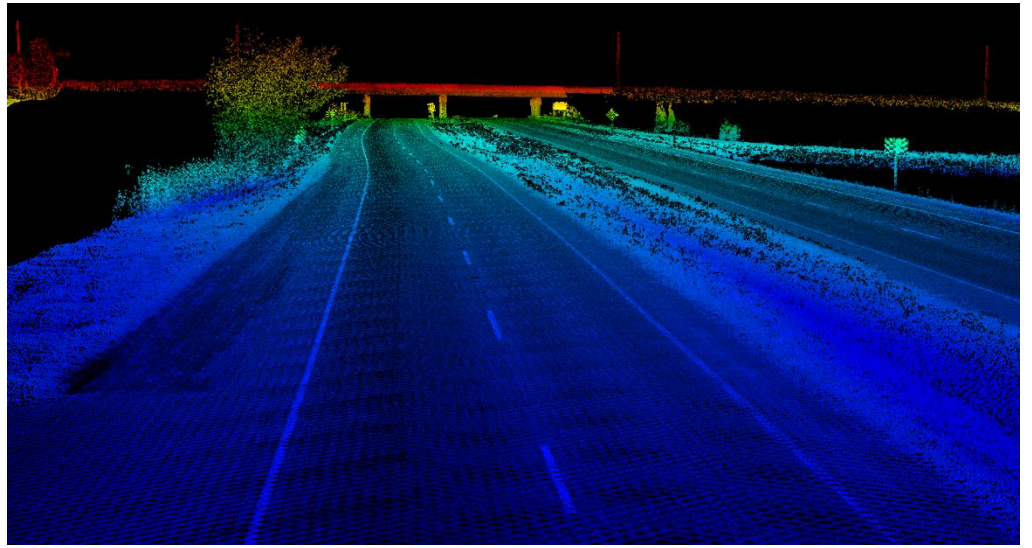


LiDAR collection

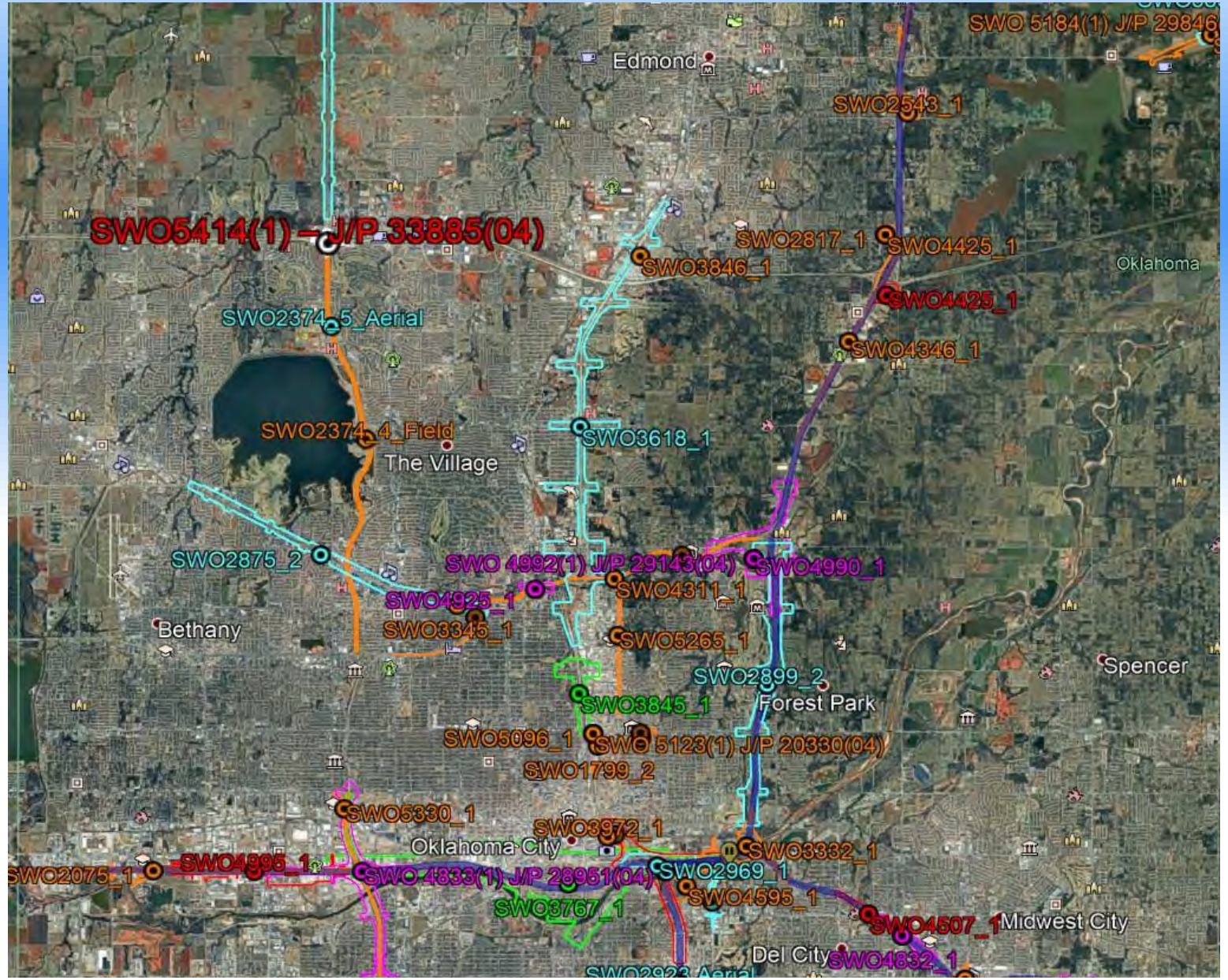
Once LiDAR data is collected it is imported into ImageStation and TerraSolid Software for editing







Using Google Earth to retrieve data



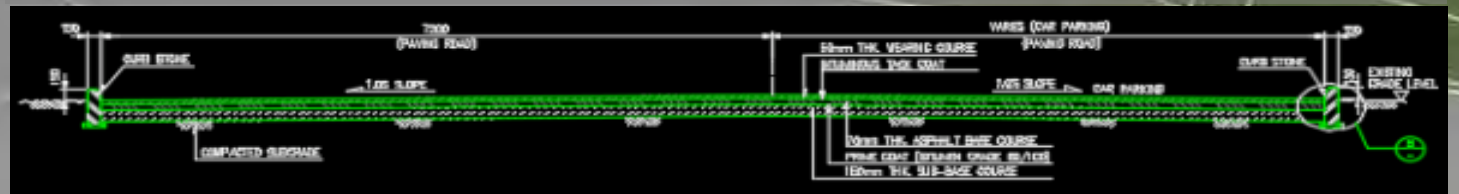
GOING PAPERLESS . . .

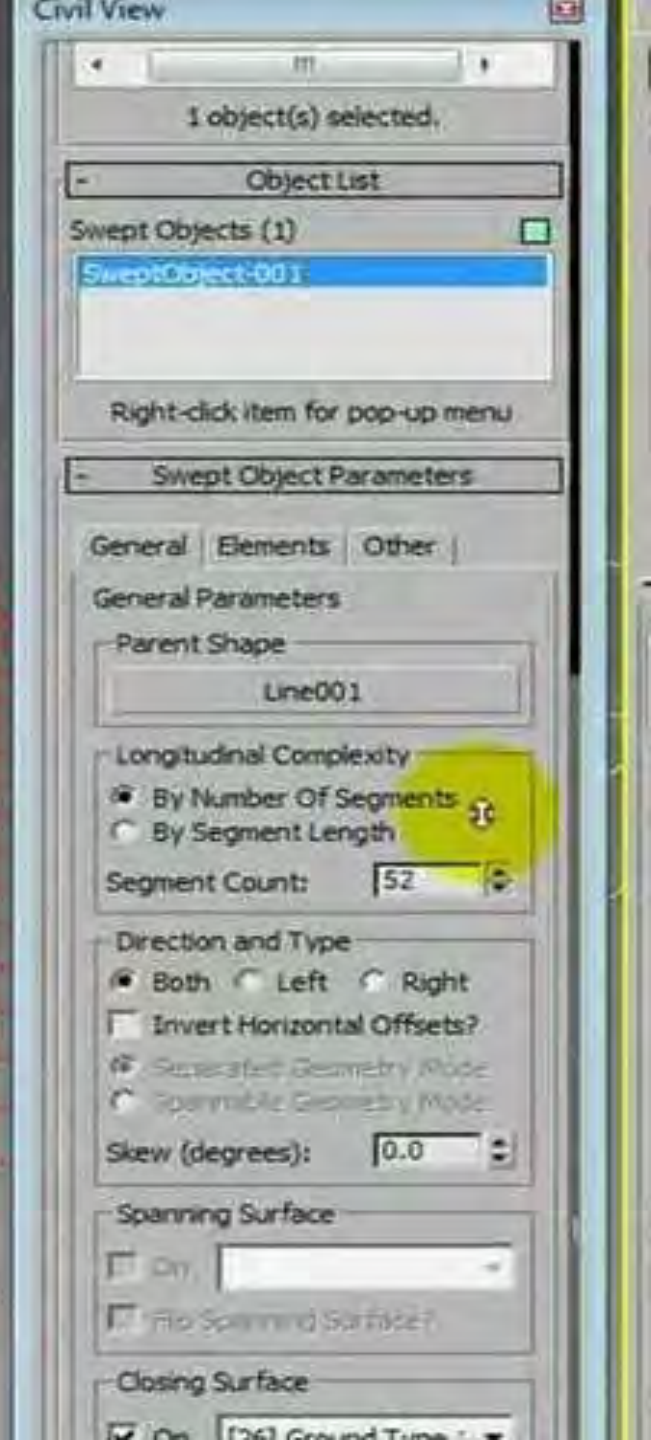
- Bid documents (plans and proposals) will be produced and maintained in an electronic format only, unless otherwise requested.
- Bid opening reports will be generated and distributed in an electronic format only, unless otherwise requested.
- Contracts will be built, executed, and stored in an electronic format only.

Reducing the use of paper increases efficiency during the bid opening process, and reduces cost to the contractors and the agency.

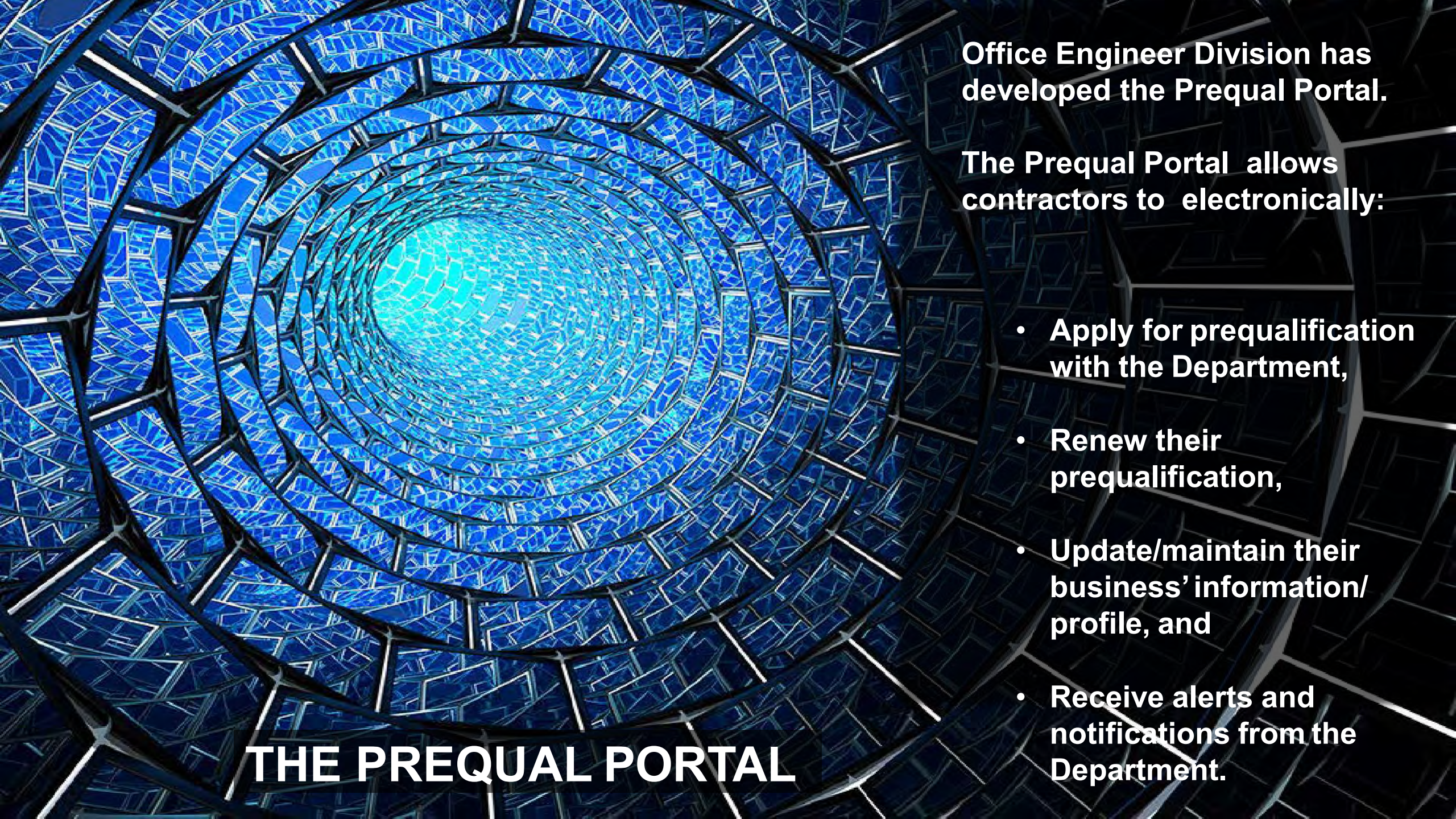
Office Engineer Division will increase its facilitation of the sharing of project design files with contractors prior to and after bidding. The files are used by the contractors prior to bidding in order to verify plan quantities. The files are used by contractors after the contract is awarded in order to perform automated machine guidance and to verify survey information.

Since the implementation of Project Wise, project plans can now be made available to the public 60 to 90 days ahead of each bid opening, rather than the current 21 day review period. Experience has shown that the more time that the contractors have to review the plans, the better bids the Department receives. Allowing contractors an earlier review of the plans may significantly reduce the number and severity of questions and revisions received by the Department during the bidding process, thereby reducing the risk of pulling projects once they are advertised.





USING LIVE STREAM TECHNOLOGY, THE DEPARTMENT IS ABLE TO ALLOW ANYONE, ANYWHERE, TO NOT ONLY VIEW MONTHLY PRE-BID MEETINGS IN REAL-TIME, BUT ALSO PARTICIPATE. ALL THAT IS NEEDED IS ACCESS TO THE INTERNET USING A DESKTOP COMPUTER, LAPTOP, OR SMART PHONE.



THE PREQUAL PORTAL

Office Engineer Division has developed the Prequal Portal.

The Prequal Portal allows contractors to electronically:

- Apply for prequalification with the Department,
- Renew their prequalification,
- Update/maintain their business' information/ profile, and
- Receive alerts and notifications from the Department.

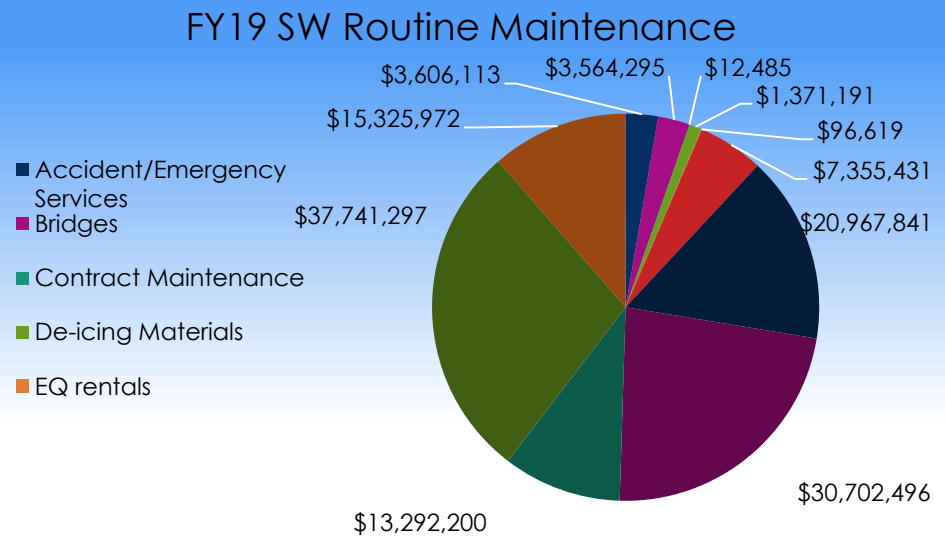
CURRENTLY, THE DEPARTMENT RELIES ON FAX NOTIFICATIONS TO COMMUNICATE LAST MINUTE PLAN REVISIONS TO POTENTIAL BIDDERS. TODAY, UTILIZING THE FUNCTIONALITY OF THE DEPARTMENT'S BIDDING SOFTWARE, THE DEPARTMENT IS NOW ABLE TO POST UP TO THE MINUTE, REVISED BID FILES. THIS APPROACH TO RESPONDING TO LAST MINUTE PLAN REVISIONS FOSTERS A FAIRER COMPETITIVE BIDDING ENVIRONMENT.

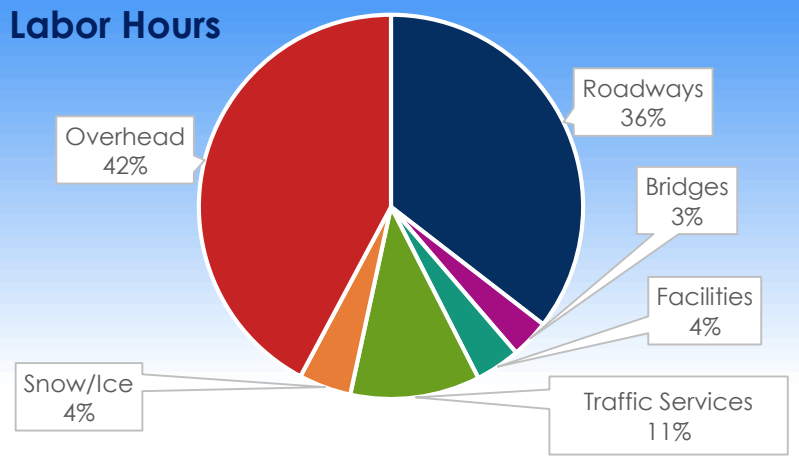
E-Construction with Mobile Inspector and Headlight

Real Time Entry

Pay for work on site as completed

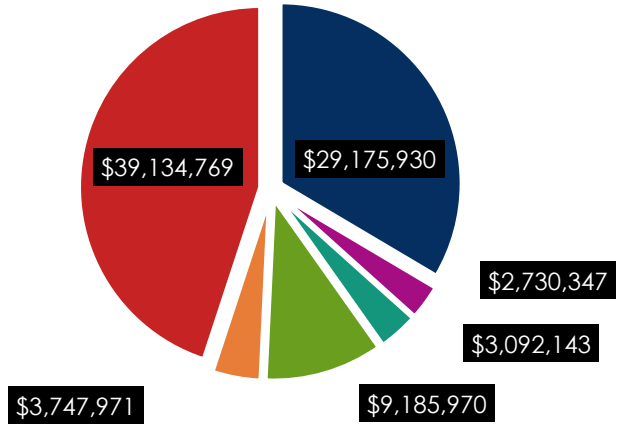
MAINTENANCE MANAGEMENT SYSTEM



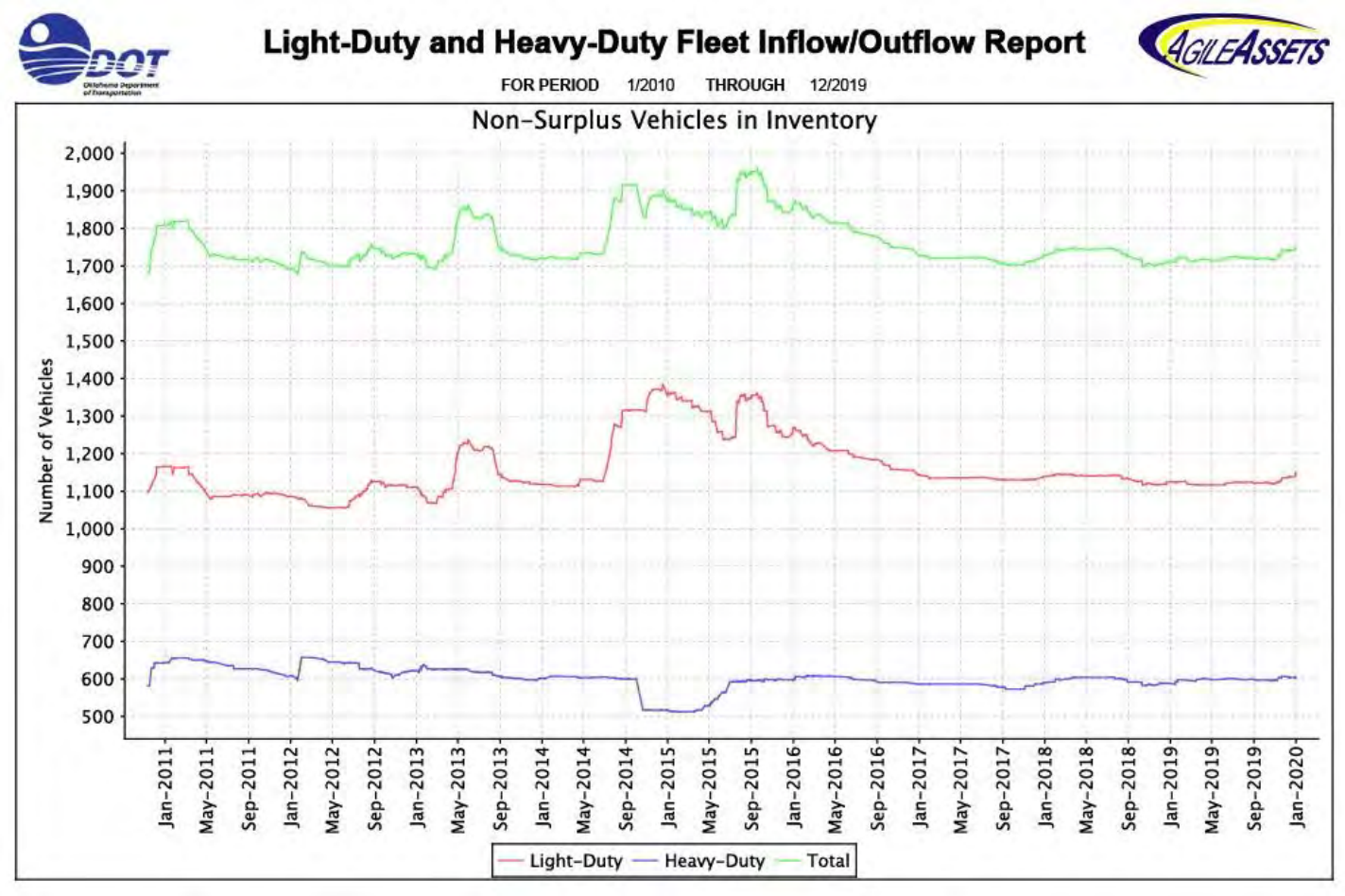


Addressing Executive Level Questions

- 507 Expenditures for FY19
- Labor Distribution
- Labor Costs



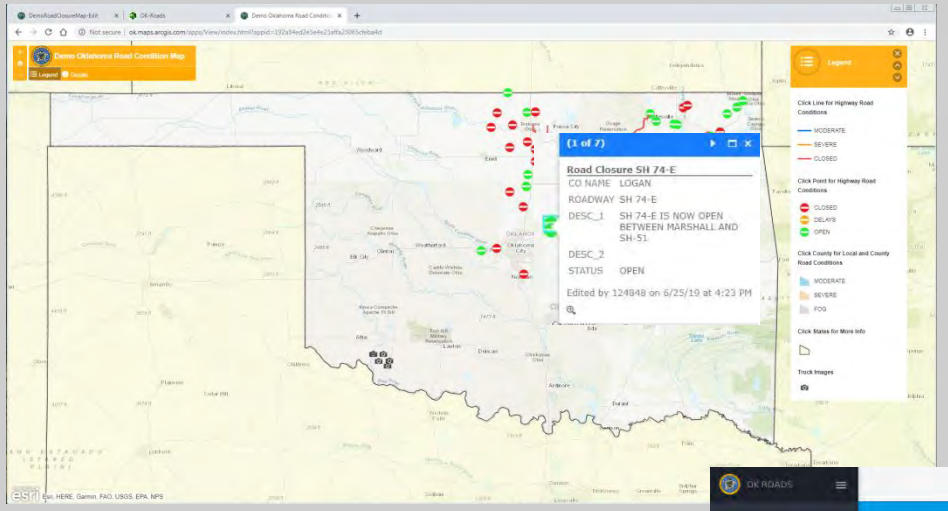
Maintenance Management System

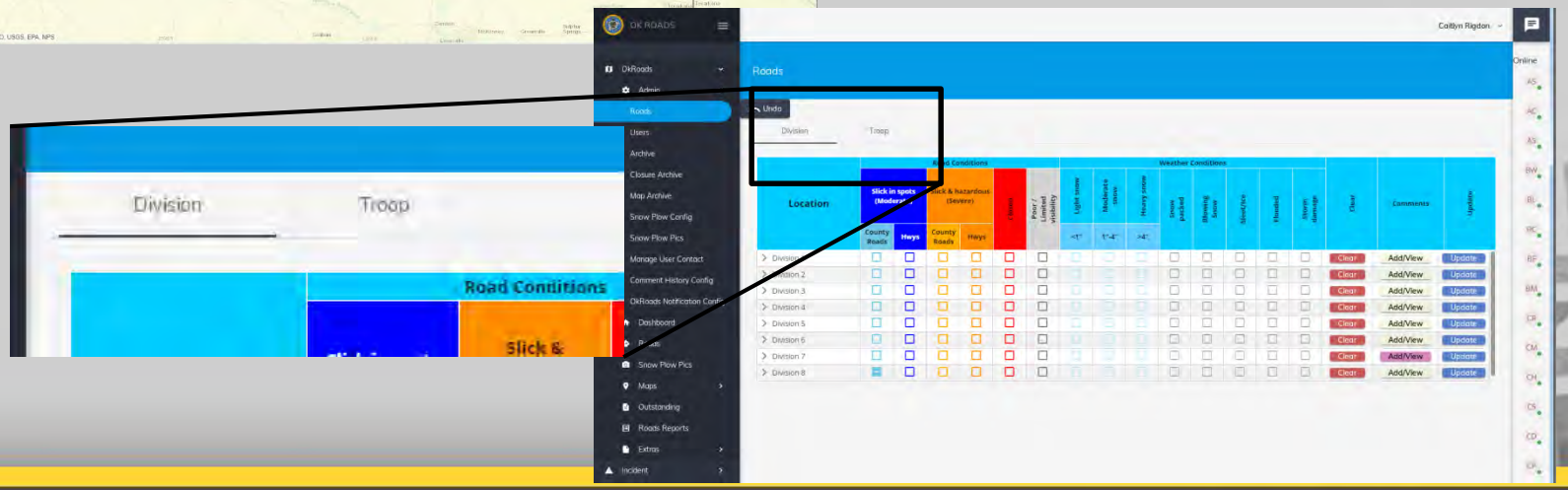


fppt.com

WEATHER

OKROADS





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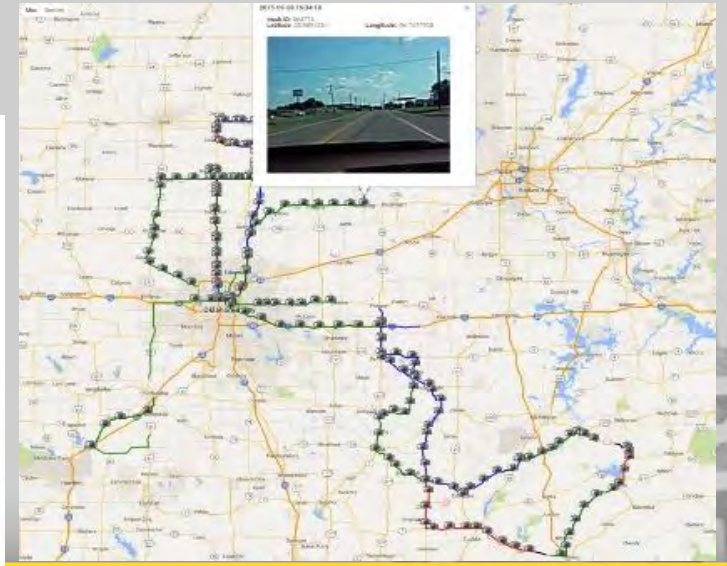
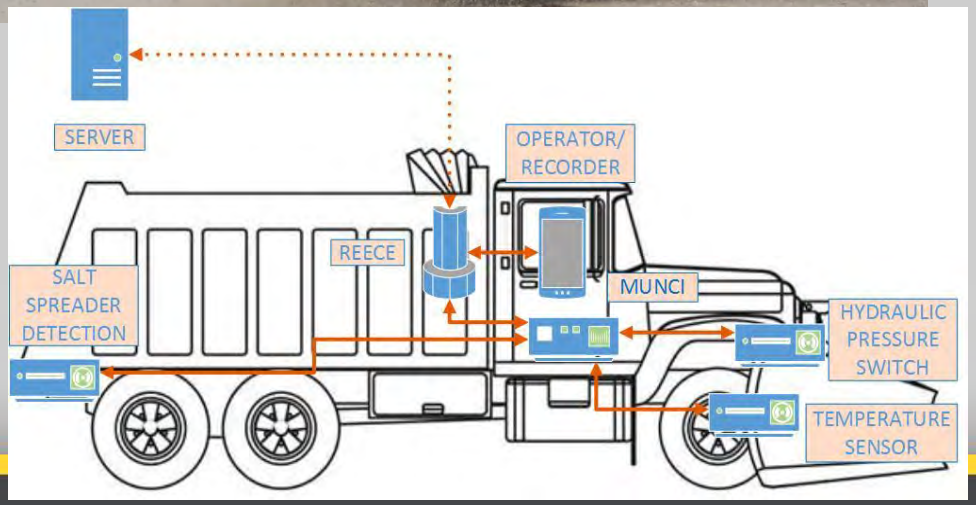
WEATHER

OKTRUCKS

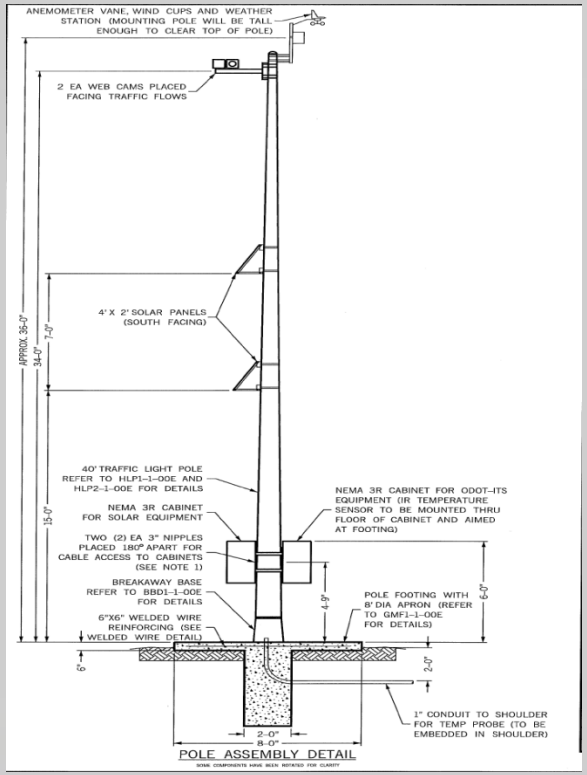


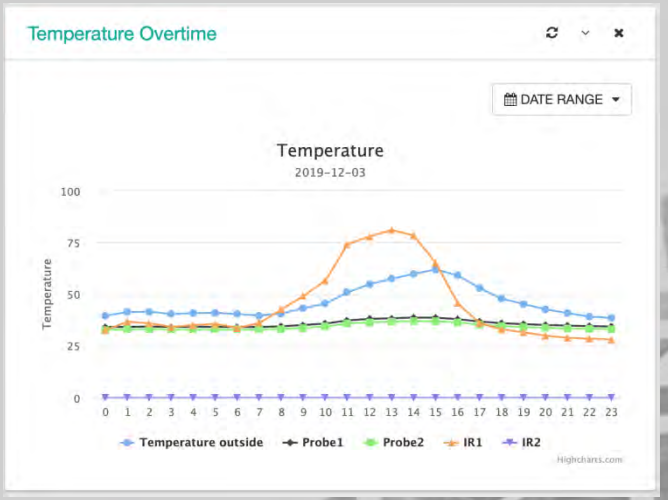


fppt.com

WEATHER

RWIS





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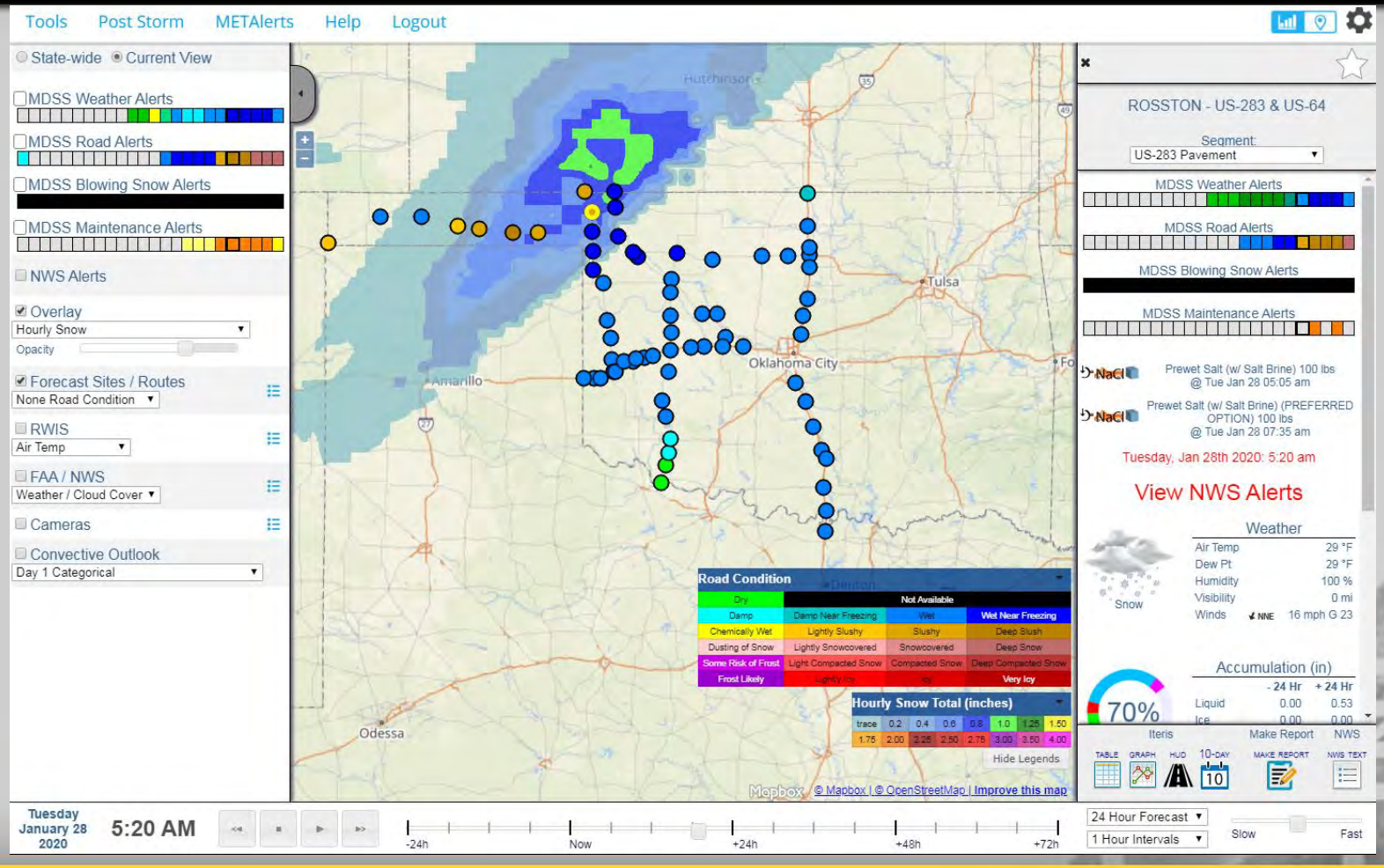
Iteris ClearPath Weather



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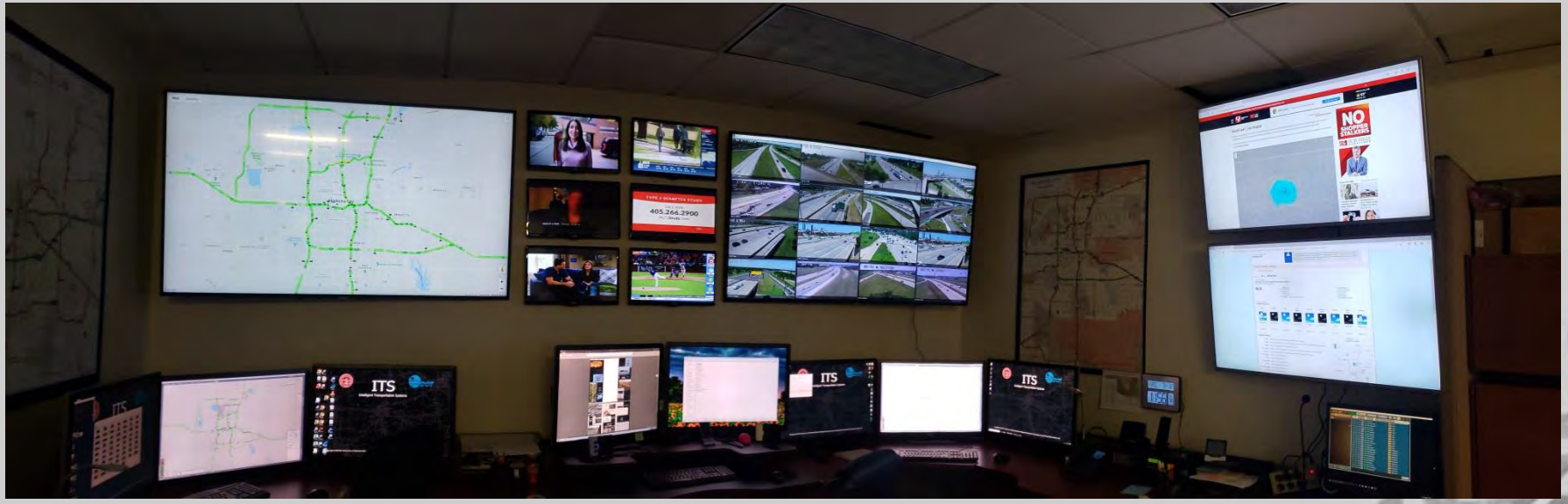
Traffic Operations Center (T.O.C.)



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TRAFFIC AND INCIDENTS

Cameras

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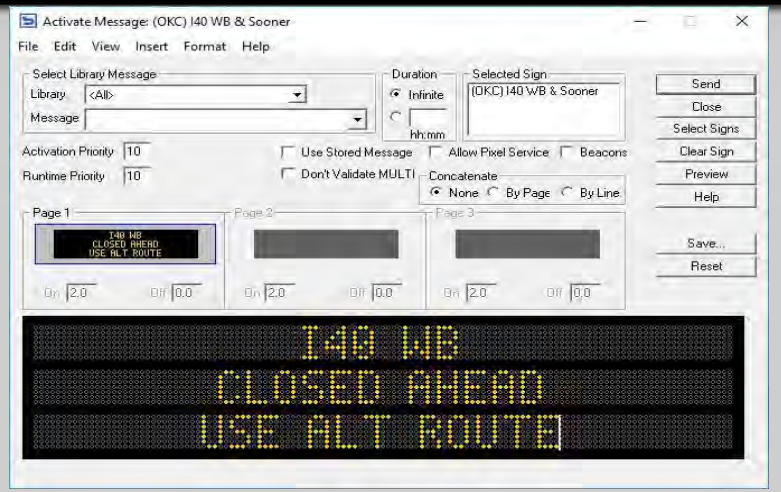
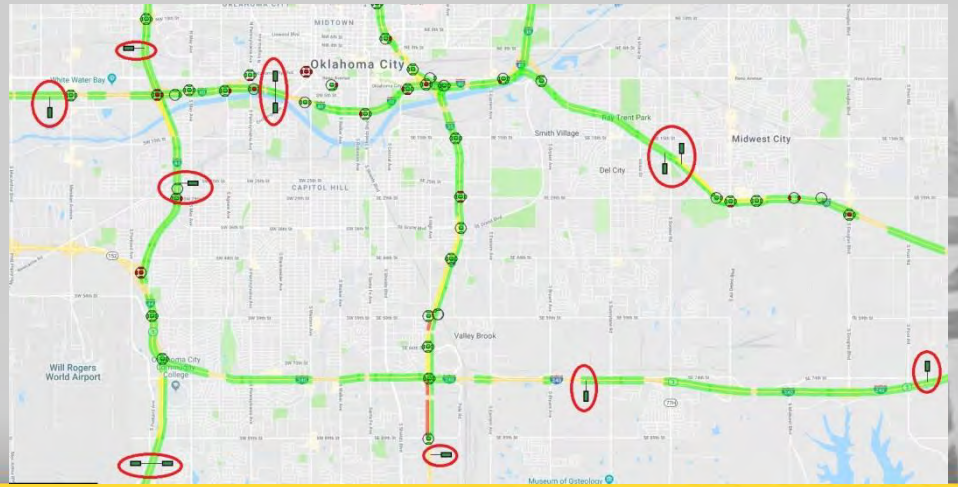
DMS Boards





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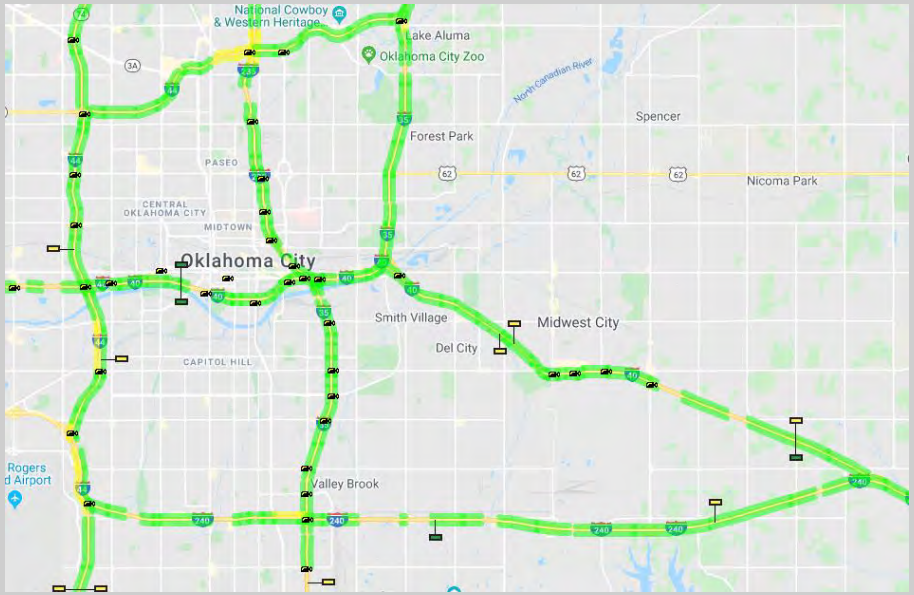
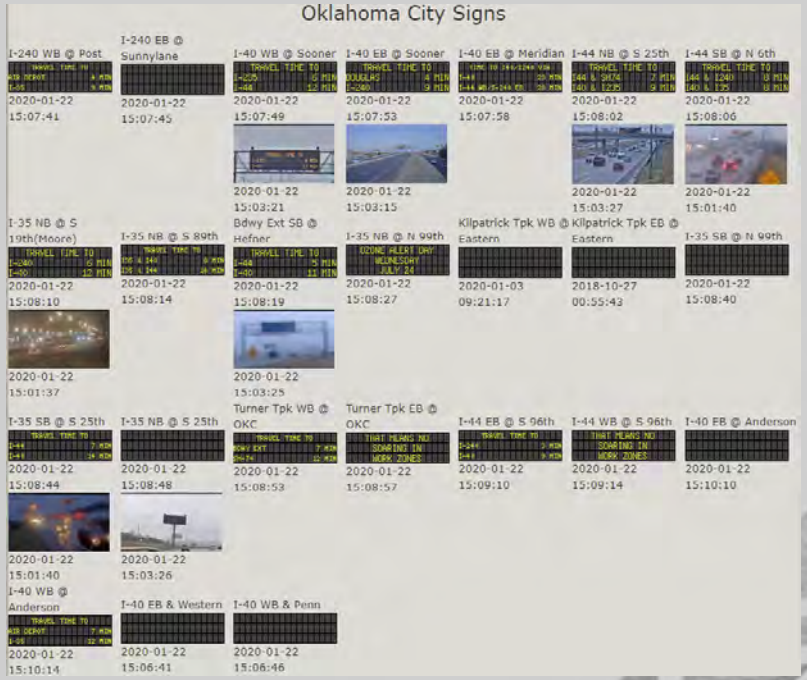
TRAFFIC AND INCIDENTS

OKTRAFFIC





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Traffic Incident Management (T.I.M.)

OKTIM
OKLAHOMA TRAFFIC INCIDENT MANAGEMENT

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OKLAHOMA Transportation