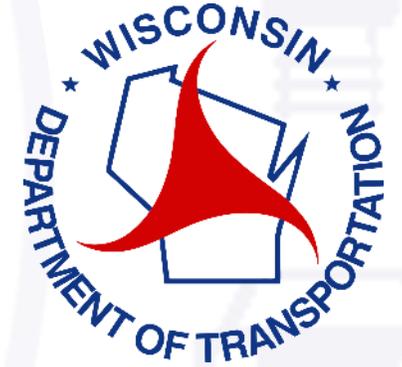


Indiana Department of Transportation CAV/ITS Initiatives

Jim Sturdevant

MAASTO States



Collaboration with INDOT



Audi



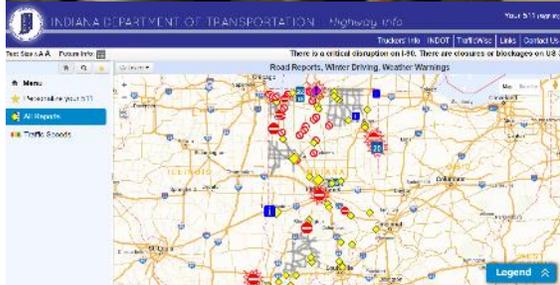
J.D. POWER



INDOT Traffic Management Center / ISP Post #52

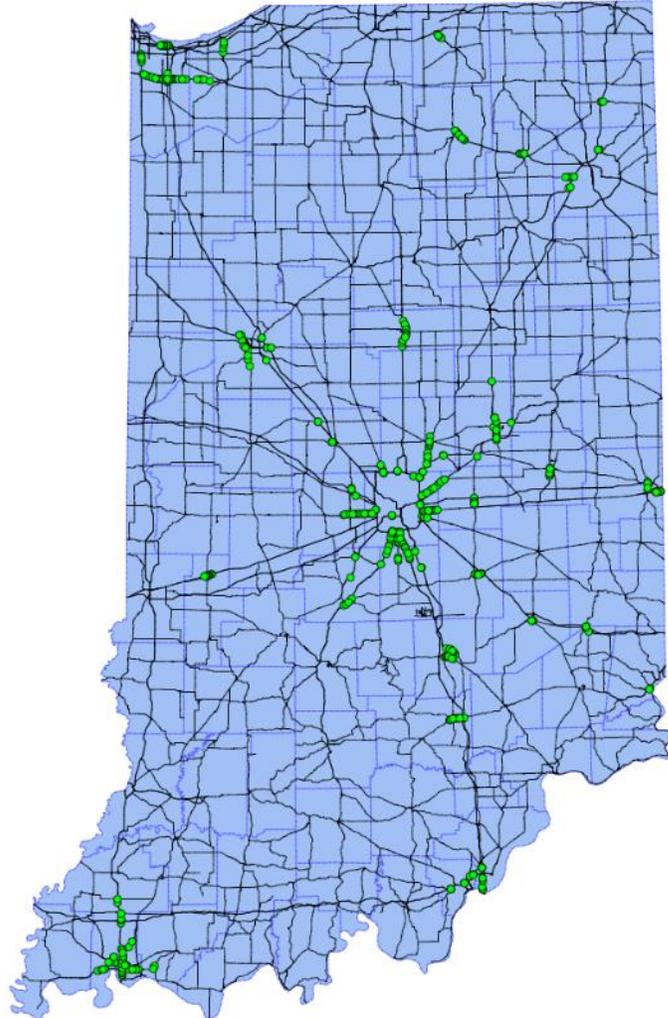


TMC Dispatch Centers

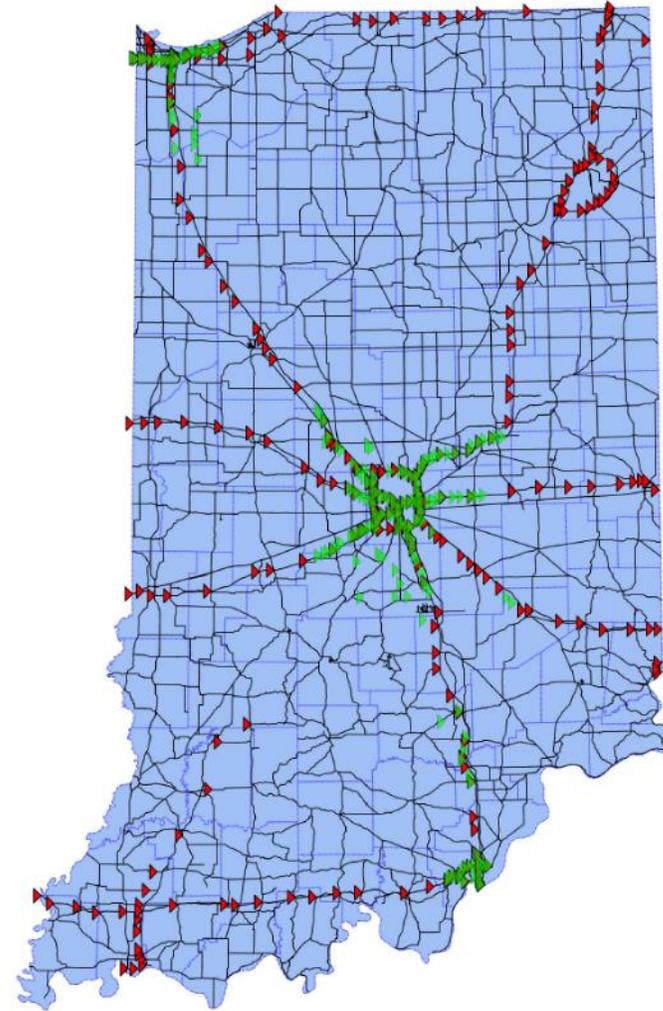


TMC Dispatch Centers

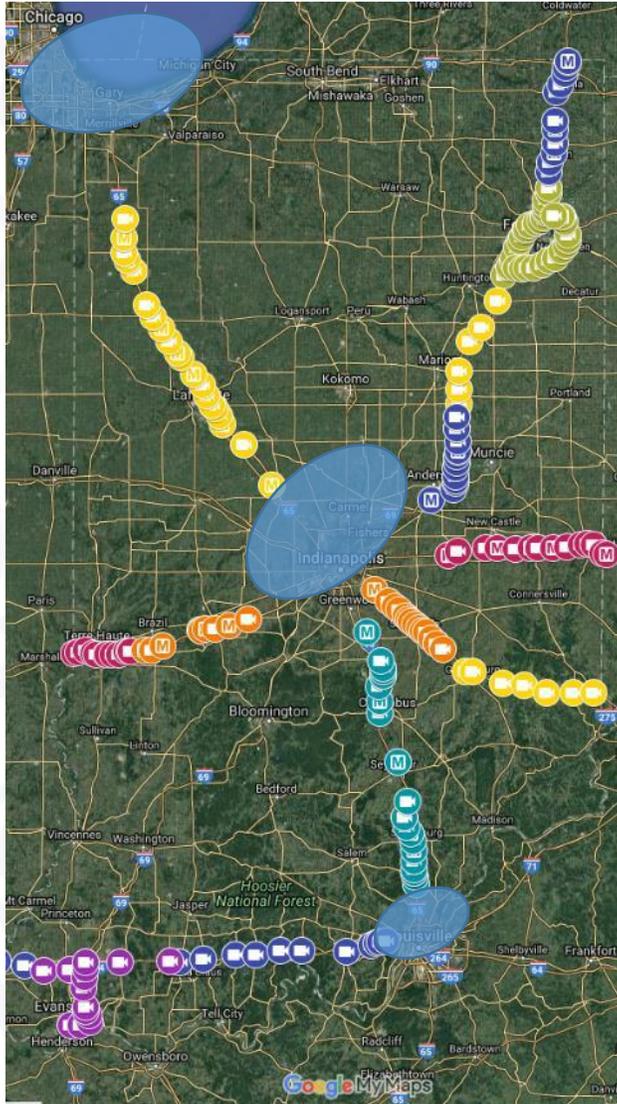




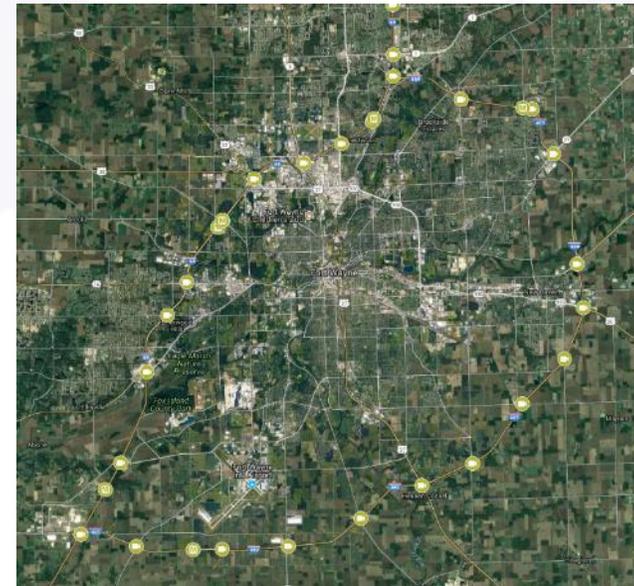
ITS Deployment



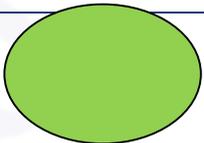
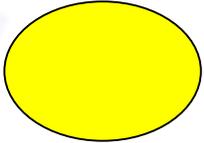
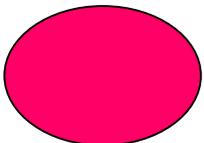
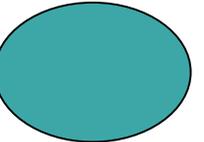
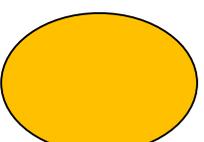
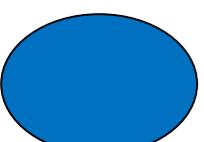
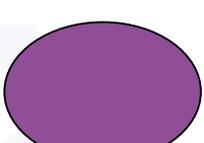
ITS Expansion Projects



- <https://www.google.com/maps/d/viewer?hl=en&mid=1WXEpWcnvUs3npmlaVCDzXDixzts6Lzy&ll=40.76562043479757%2C-85.92130420000001&z=9>
- Beyond 3 major metro areas: -All Interchanges FY19-24
- Allen County- Full build of ITS sensors Message Boards, Addition services



ITS Deployment

- 2019 
- 2020 
- 2021 
- 2022 
- 2023 
- 2024 
- 2025 



ATMS Systems



Session View Help

Incident DMS Camera LCS Ramp Meter R_Node

Single Multiple

Name V394E16 Brightness 28% Camera C916

Location I-394 EB of Dunwoody Blvd

Operation None

Deployed 10:16 Expires 10:17

Current Preview

PARKING INFORMATION	
RAMP A	OPEN
RAMP B	OPEN
RAMP C	OPEN

PARKING INFORMATION p.1

RAMP A OPEN

RAMP B OPEN

RAMP C OPEN

Duration

Send Blank

Clear

DMS status: User Deployed

122 Available 3 Maintenance 9 No controller

3 User Deployed 11 Inactive 146 All

4 Scheduled 4 Failed

V35E12 gilmken

INCIDENT ON RAMP

894 EAST AT HWY 61

EXIT RAMP BLOCKED

I-35E NB @ Little Canada Rd

V35E03 gilmken

INCIDENT ON RAMP

694 EAST AT HWY 61

EXIT RAMP BLOCKED

I-35E SB S of Co Rd E

V694E05 gilmken

INCIDENT ON RAMP

894 EAST AT HWY 61

EXIT RAMP BLOCKED

I-694 EB @ Victoria St

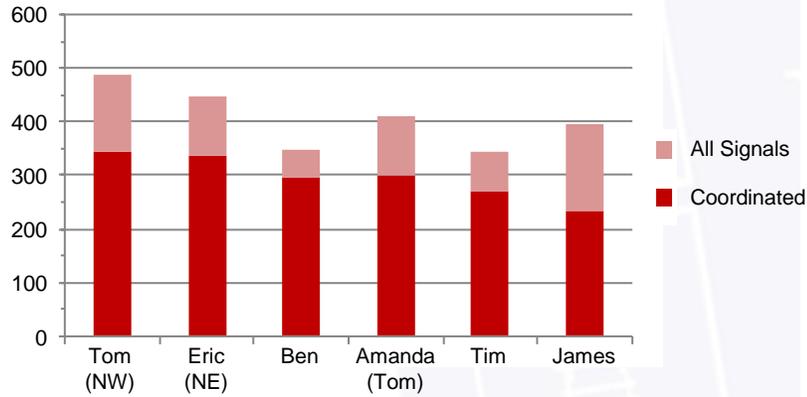
Layers Legend Density

Map showing Minneapolis area with traffic incidents and road closures.

Action Plan

lat 44.970662° lon -93.296151°

2500 INDOT Signals



	All Signals	
	Existing	Proposed
Tom (NW)	596	487
Eric (NE)	515	449
Ben	333	348
Amanda (Tom)	311	411
Tim	336	343
James	343	397

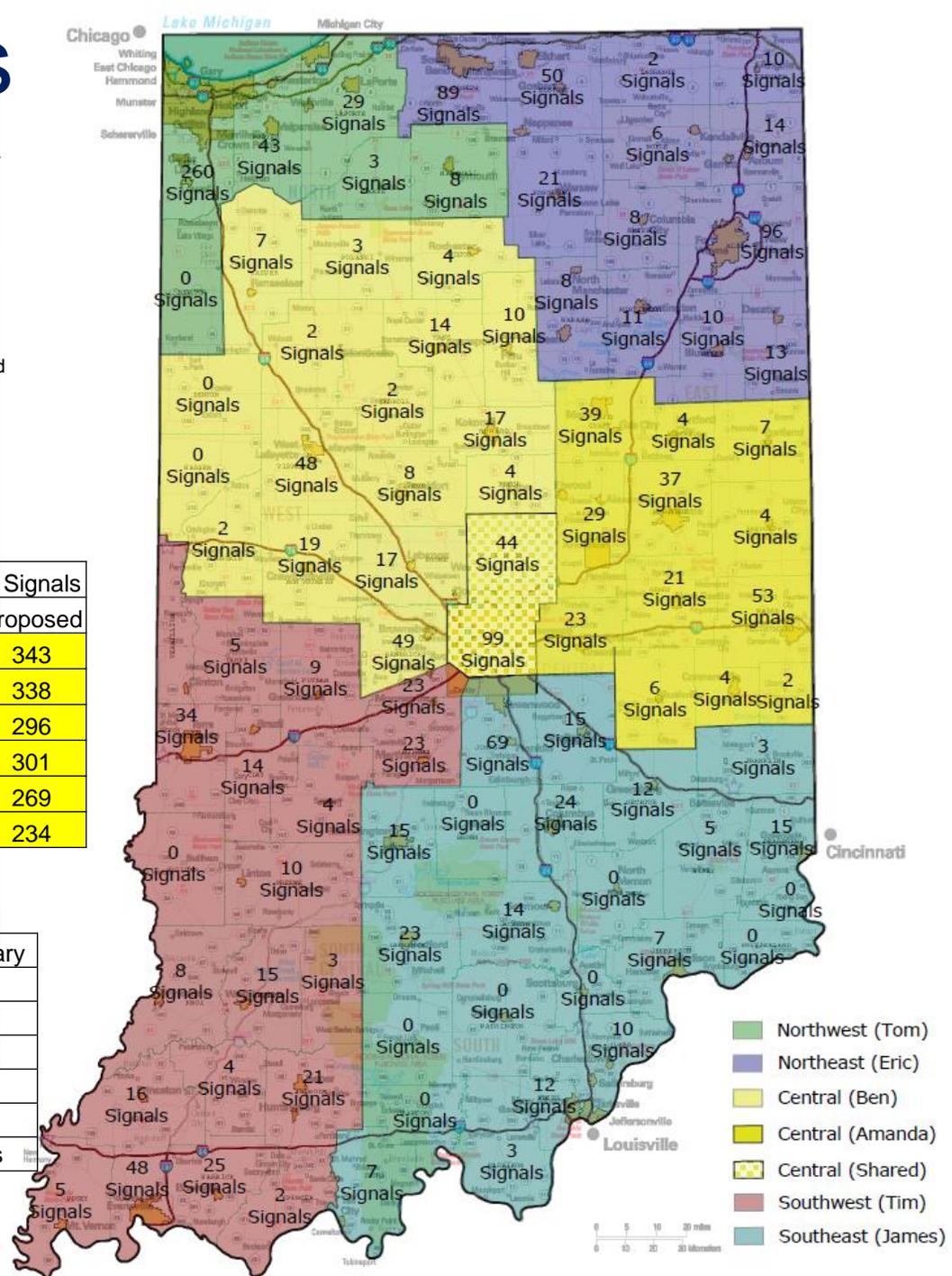
	Coordinated Signals	
	Existing	Proposed
Tom (NW)	466	343
Eric (NE)	350	338
Ben	293	296
Amanda (Tom)	215	301
Tim	253	269
James	185	234

Land Area Covered

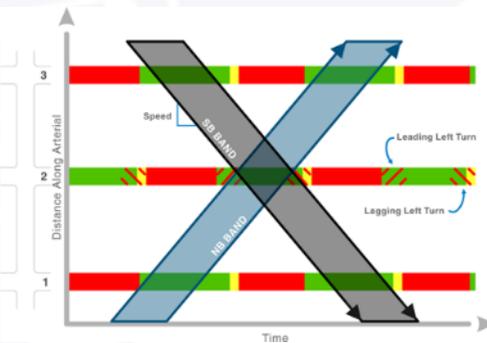
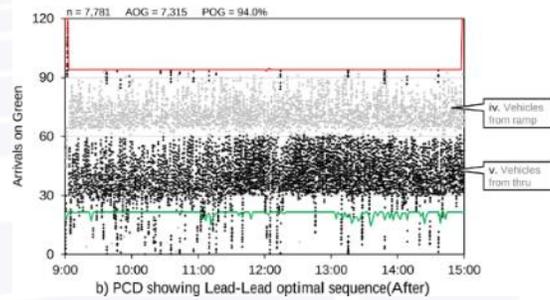
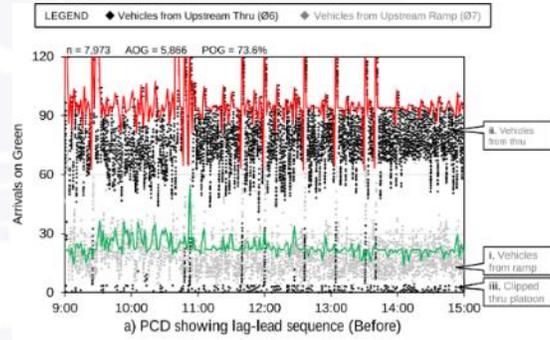
	Existing	Proposed
Tom (NW)	6560 sq mi	2521 sq mi
Eric (NE)	7300 sq mi	5518 sq mi
Ben	3159 sq mi	7586 sq mi
Amanda (Tom)	2641 sq mi	4519 sq mi
Tim	8878 sq mi	7755 sq mi
James	7382 sq mi	8427 sq mi

District Contacts

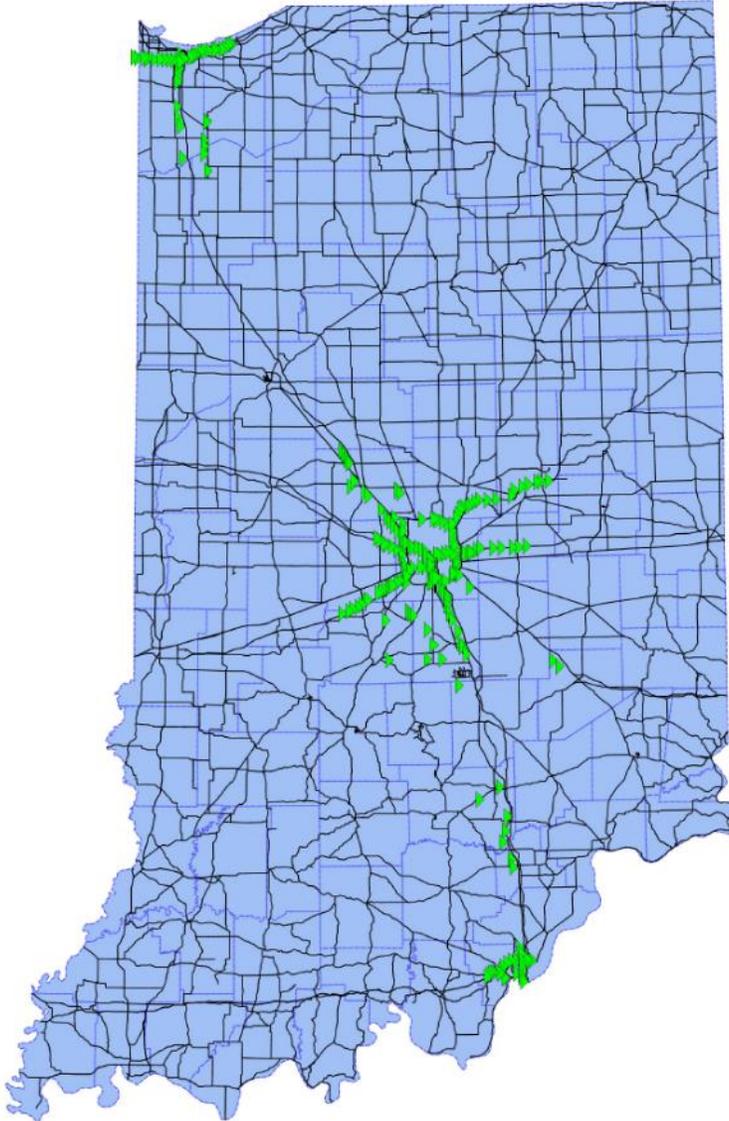
	Primary	Secondary
C-ville	Ben	Tim
Ft. Wayne	NE	Tom
Greenfield	Tom	NE
LaPorte	NW	Ben
Seymour	James	???
Vincennes	Tim	James



Traffic Systems



Traffic Signals

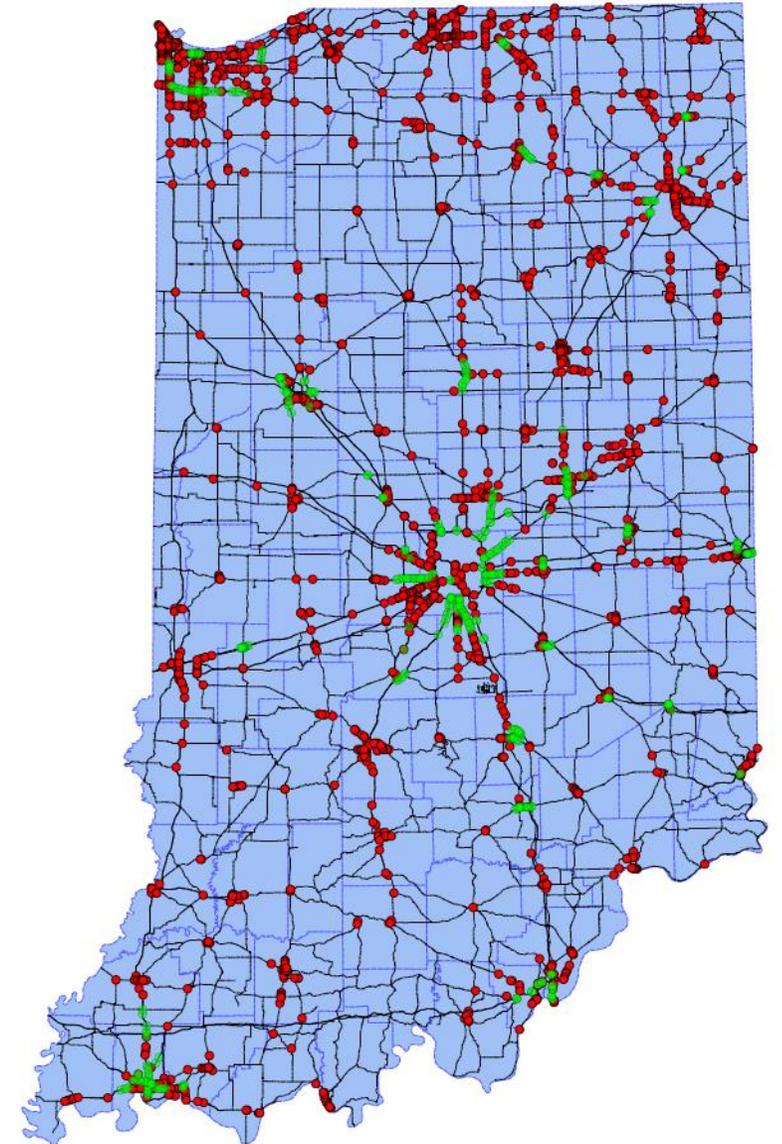


Signal Communication improvements-

Increasing Communication from 500 to all 2500

Adding connected V2I capability

Adding CCTV at select locations



Traffic Signal Communication Deployment Contracts

2019 CMAQ, Seymour District,

2020 Seymour, Greenfield

2021 Ft Wayne, Laporte

2022 Ft Wayne, Laporte

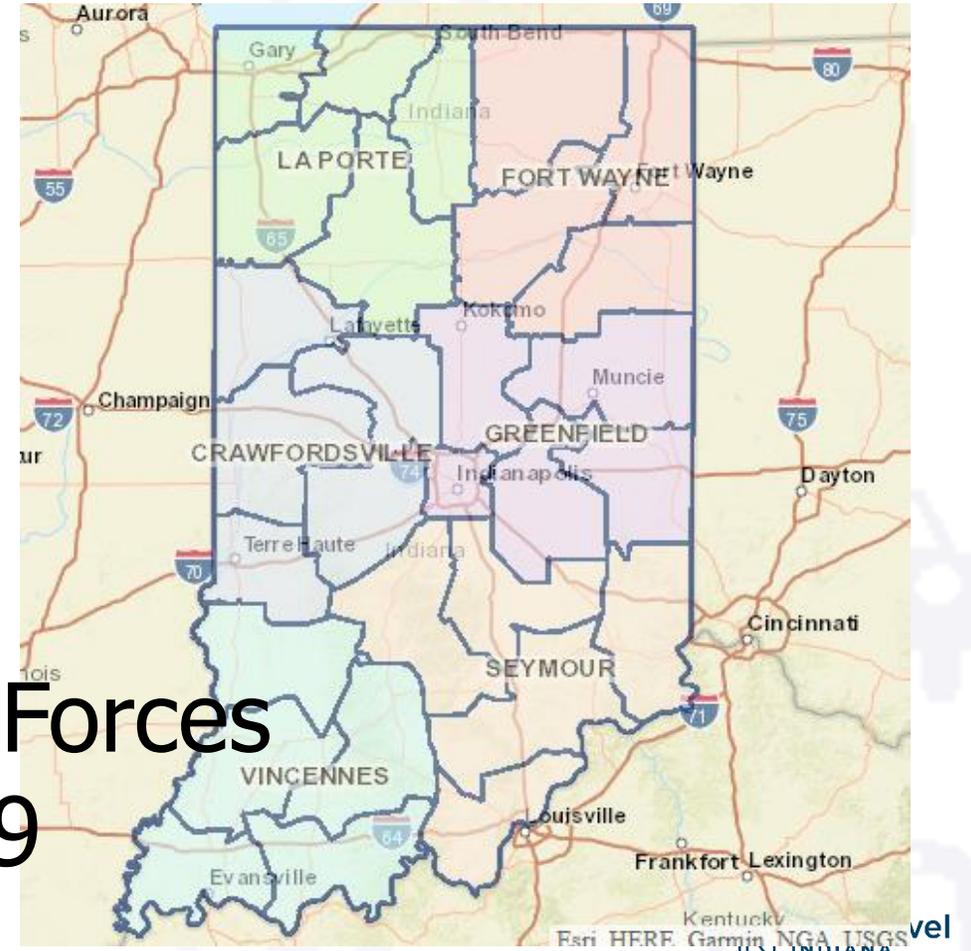
2023 Laporte, Crawfordsville

2024 Crawfordsville, Vin.

2025 Vin. District

Ongoing replacement with State Forces

Example Jasper & Evansville 2019



Traffic Signal Central System

Entity Tree

- System CE565 Vissim
 - Signal 1 State Route 43 & State Route 26
 - Signal 2 State Route 43 & Howard Avenue
 - Signal 3 State Route 43 @ US221 EB Ramp
 - Signal 4 State Route 43 @ US221 WB Ramp
 - Signal 5 State Route 43 & Robinson Street

Signal 1
State Route 43 & State Route 26 (ASC) - Sys: CE565 Vissim

Mode / Pattern Coordination Time Preempt

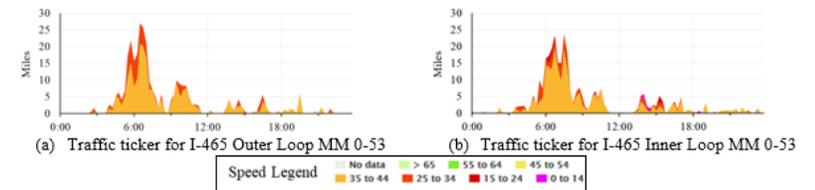
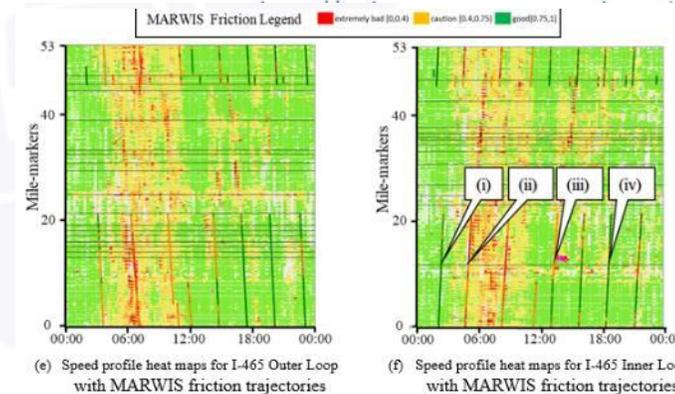
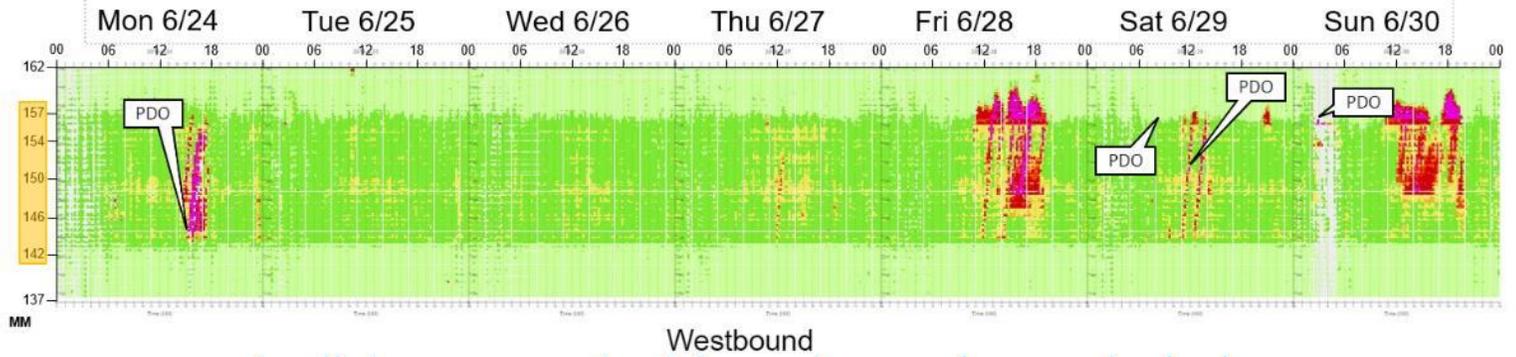
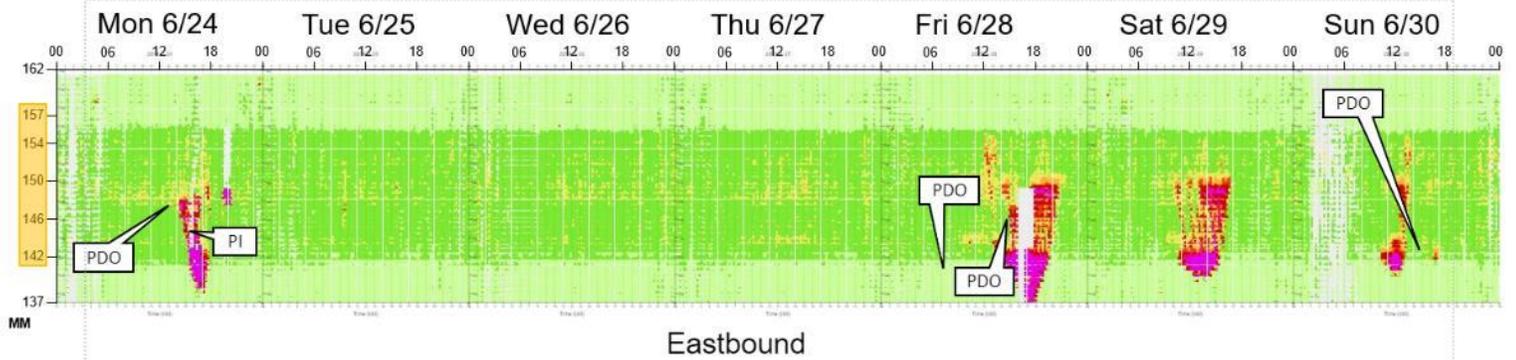
Desired	Current	Cycle	Actual	Prog	Last	Preempt
NON/NON	TODY/1	Offset	60	120	00:00:43	Error 7
Phase	1 2 3 4 5 6 7 8 9 10 11 12					
Actual	0 24M 9 32	0	24M	60		
Prog	0 31 8 63	8	31	10 51		
On						
Ped						
Ped Call						
Next						
Overlap	A B C D E F G H I J K L					
Time	33 33 32 32					
On						
Ped						



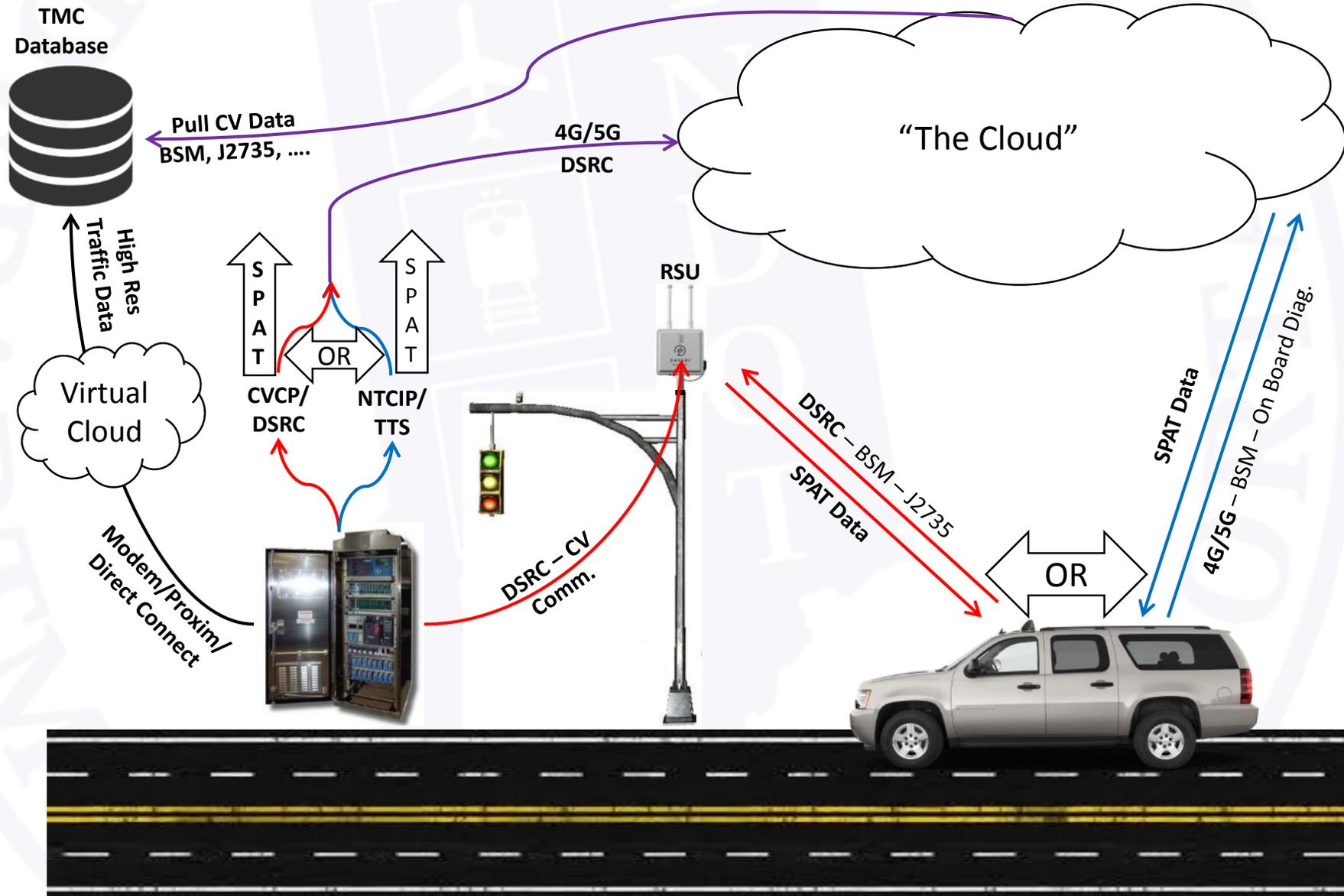
NEVER STAND STILL



Research – Aptive and Connected Corridors



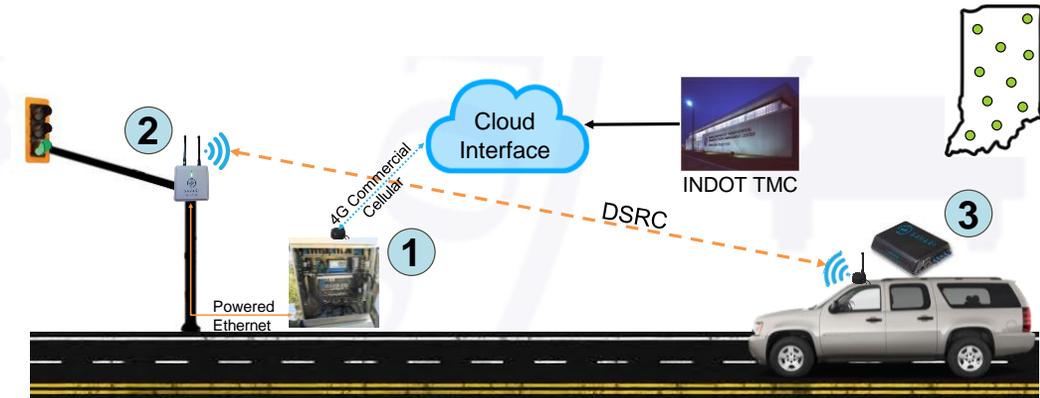
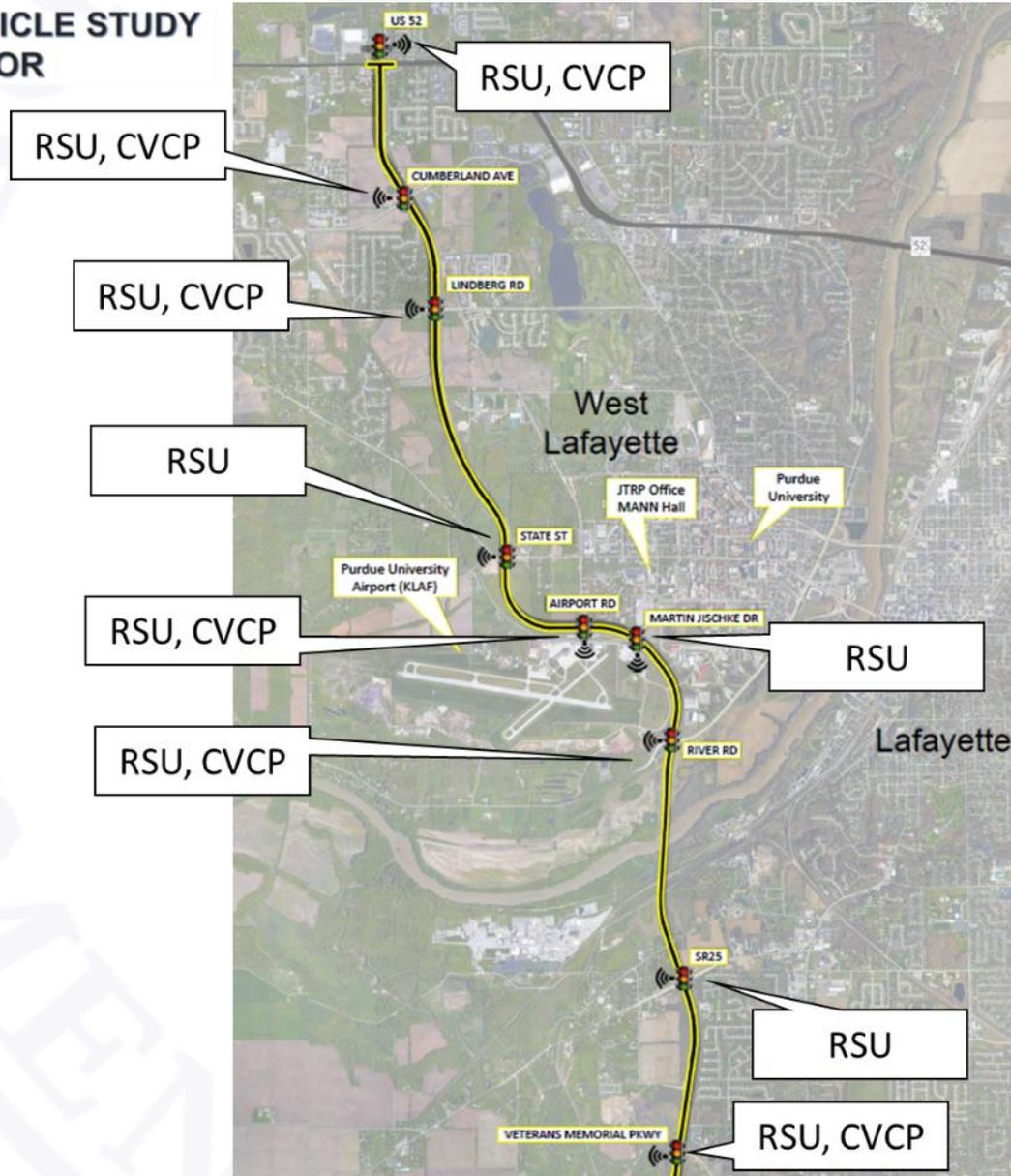
Connected Vehicles – Virtual Detection



Connected Vehicles

CONNECTED VEHICLE STUDY CORRIDOR

US-231
Deployment update



Connected Vehicles – US-31 Corridor in Kokomo, IN



Connected Vehicles



Audi Dashboard Display Examples



Aptive Kokomo Connected Corridor



Aptive Kokomo Connected Corridor



Truck Connectivity



Truck Connectivity – Systems Optimization

