



**MDOT
Traffic Signal
Preventative
Maintenance
Program**



Agenda

1. History of Signal Maintenance in MS
2. Digital Transformation
3. Current Progress
4. Benefits of the New Approach
5. Future Uses of the Database



History of Traffic Signal Preventative Maintenance in Mississippi



Preventative Maintenance Checklist



Intersection: District:

County: Date:

City: Time:

TRAFFIC SIGNAL CABINET

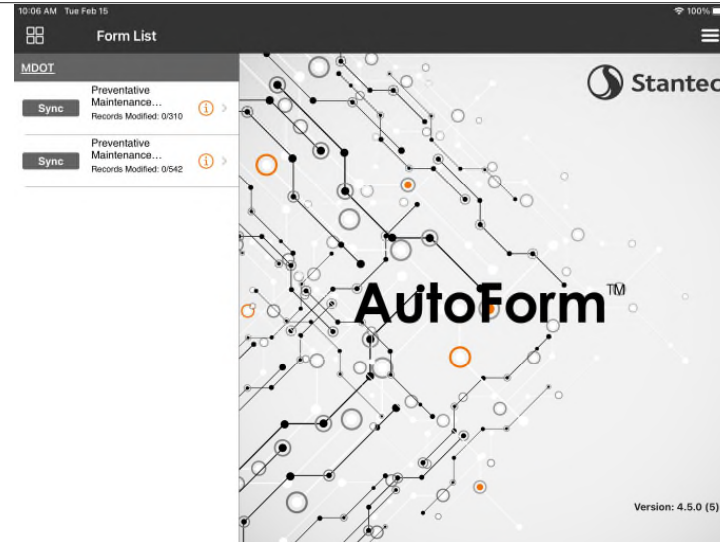
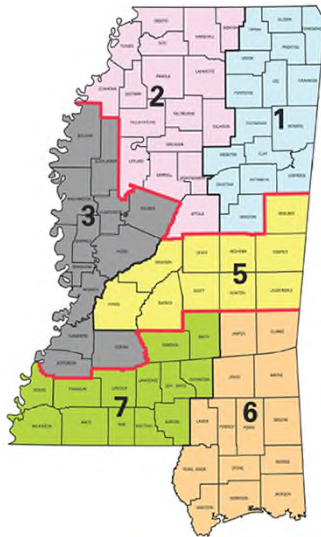
Vacuum Cabinet: <input type="text" value="▼"/>	Auxiliary Relays: <input type="text" value="▼"/>
Cabinet Filter: <input type="text" value="▼"/>	Main Lightning Arrestor: <input type="text" value="▼"/>
Cabinet Door Gasket: <input type="text" value="▼"/>	Loop Arrestors: <input type="text" value="▼"/>
Intersection Diagram: <input type="text" value="▼"/>	Signal Arrestors: <input type="text" value="▼"/>
Lubricate Locks & Hinges: <input type="text" value="▼"/>	Ped Arrestors: <input type="text" value="▼"/>
Conduit Seal: <input type="text" value="▼"/>	Video Arrestors: <input type="text" value="▼"/>
Cabinet Base Seal: <input type="text" value="▼"/>	Other Arrestors: <input type="text" value="▼"/>
Cabinet Light Operation: <input type="text" value="▼"/>	Vehicle Detection: <input type="text" value="▼"/>
Fan / Thermostat: <input type="text" value="▼"/>	Verify Calls: <input type="text" value="▼"/>
GFCI Receptacle: <input type="text" value="▼"/>	Detector Amp Faults: <input type="text" value="▼"/>
Duplex Receptacle: <input type="text" value="▼"/>	Broken Loop: <input type="text" value="▼"/>
Incoming Line Voltage: <input type="text"/>	Broken Loop: <input type="text" value="▼"/>
Police Functions: <input type="text" value="▼"/>	Broken Loop: <input type="text" value="▼"/>
Special Stop Time Switch: <input type="text" value="▼"/>	Broken Loop: <input type="text" value="▼"/>
Spare Conductors: <input type="text" value="▼"/>	Re-Tune Amp: <input type="text" value="▼"/>
Terminal Connections: <input type="text" value="▼"/>	Preemption Type: <input type="text" value="▼"/>
Test Circuit Breakers: <input type="text" value="▼"/>	Pre-empt Operation: <input type="text" value="▼"/>
Flasher: <input type="text" value="▼"/>	Communications Type: <input type="text" value="▼"/>
Flash Relays: <input type="text" value="▼"/>	Verify Communications: <input type="text" value="▼"/>
Load Switches: <input type="text" value="▼"/>	Controller Date, Time & DST: <input type="text" value="▼"/>
Start Up Relays: <input type="text" value="▼"/>	Conflict Monitor Test: <input type="text" value="▼"/>

Historical Preventative Maintenance

- Limited Resources
- Reactive to Proactive Maintenance
- Paper Forms in the Field
- Duplicate Entry of Paper Forms into PDF Forms
- Lack of Geo-located Database



Digital Transformation



- Initial Work Assignments in Districts 1 and 2
- Continued Proactive Maintenance
 - Vacuuming Cabinet
 - Test Conflict Monitor
 - Perform Cable Management in Cabinet
 - Detection Tuning
 - Minor Repairs Such as Pushbutton Replacement
- Utilize mTools™ to Capture Data
 - Single Data Entry in the Field
 - GPS Location, Photos, Documentation
 - Cloud-based Database

- I-269 Southbound Ramp @ MS 302-20...
Last Modified: 2021-12-16 08:26:09
- I-269 Northbound Ramp @ MS 302-20...
Last Modified: 2021-12-16 08:24:29
- MS 302 @ Cayce Road-2021-12-13T06:1...
Last Modified: 2021-12-16 08:20:31
- I-269 SB Ramp @ MS 309-2021-12-13T...
Last Modified: 2021-12-16 08:20:00
- I-269 NB Ramp @ MS 309-2021-12-07...
Last Modified: 2021-12-09 12:24:51
- MS 178 @ MS 309-2021-12-07T06:00:...
Last Modified: 2021-12-09 12:24:14
- I-269 NB Ramp @ Getwell Road-2021-1...
Last Modified: 2021-12-09 12:23:23
- I-269 SB Ramp @ Getwell Road-2021-1...
Last Modified: 2021-12-09 12:22:29
- I-269 NB Ramp @ Craft Road-2021-12-...
Last Modified: 2021-12-09 12:21:53
- I-269 SB Ramp @ Craft Road-2021-12-...
Last Modified: 2021-12-09 12:21:14
- I-269 SB Ramp @ MS 305-2021-12-01T...
Last Modified: 2021-12-09 12:20:31
- I-269 NB Ramp @ MS 305-2021-11-30...
Last Modified: 2021-12-09 12:19:53

GENERAL INFORMATION

District:*	2	Intersection:*	I-269 Southbound Ramp @ MS 302
County:*	Marshall	Date:*	12/14/2021
City:*	Cayce	Signal Designation:	S0205
Location:	 34.96, -89.64	PM Status:	<input type="button" value="Not Started"/> <input type="button" value="In Progress"/> <input checked="" type="button" value="Complete"/>

TRAFFIC SIGNAL CABINET

Controller Model	M50	Controller Serial Number	143038
Controller Date	J14	Controller Date, Time and DST	Correct Date, Time and DST
Vacuum Cabinet	<input type="button" value="Completed"/> <input type="button" value="Not Necessary"/>	Auxiliary Relays	<input type="button" value="Working"/> <input type="button" value="Not Working"/> <input checked="" type="button" value="N/A"/>
Cabinet Filter	<input type="button" value="Replaced"/> <input type="button" value="OK"/>	Main Lightning Arrestor	<input type="button" value="Working"/> <input type="button" value="Not Working"/>
Cabinet Door Gasket	<input type="button" value="Good Condition"/> <input type="button" value="Needs Replacing"/>	Loop Arrestors	<input type="button" value="Working"/> <input type="button" value="Not Working"/> <input type="button" value="Missing-See Notes"/> <input type="button" value="N/A"/>



SharePoint Database

SharePoint


BROWSE PAGE

Home

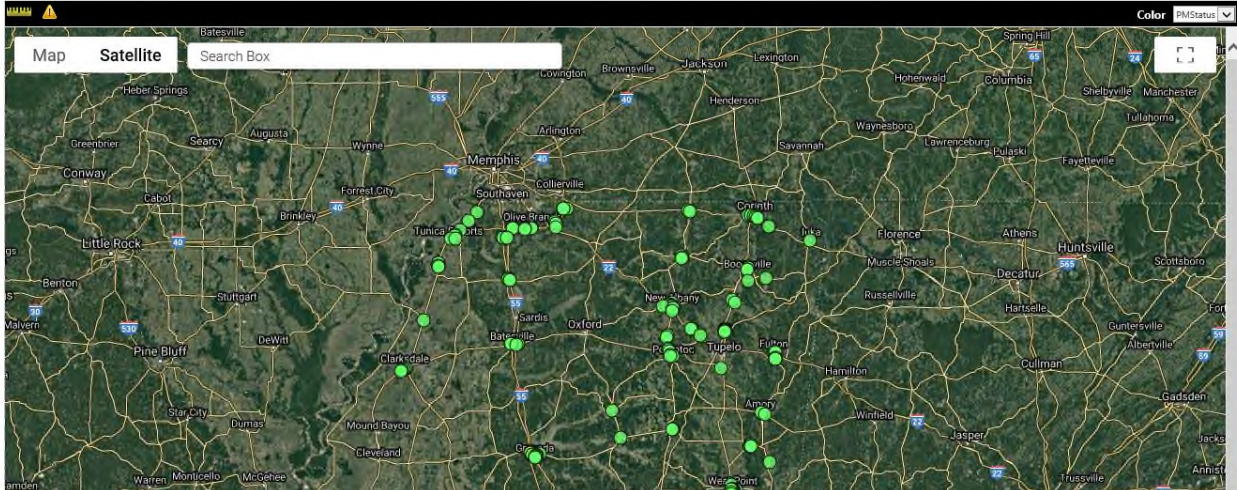
- AF_Cloud
- Generate Report
- PMC List

Traffic Signal Preventative Maintenance

Project No. SP-9999-09(271)/108600-101000

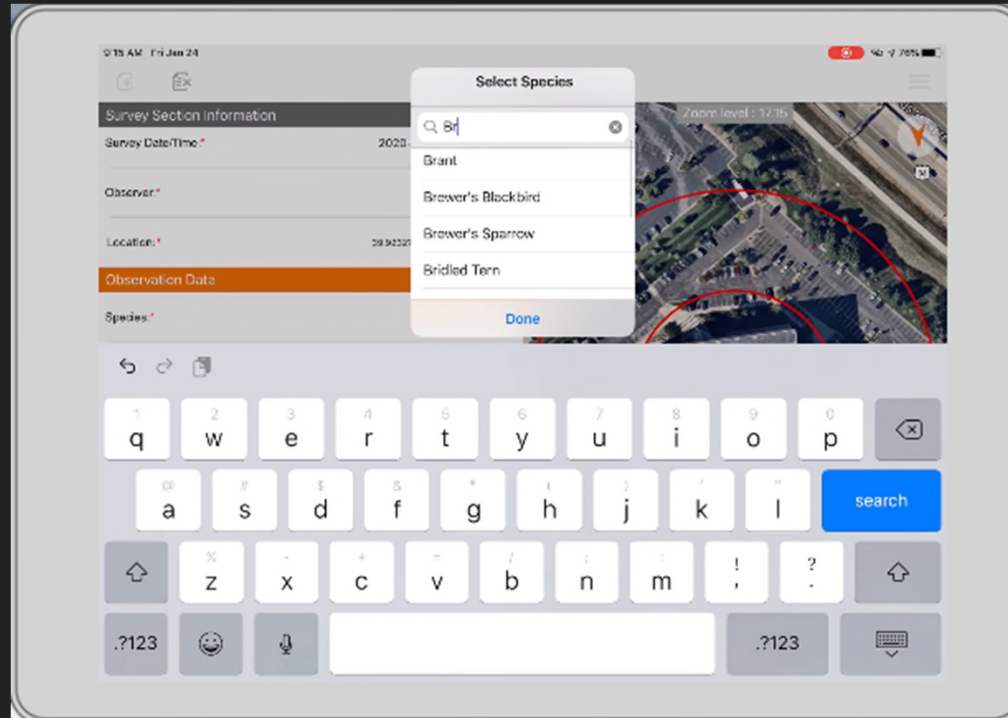


Business Center



Map Satellite Search Box Color PMStatus

The map displays the state of Mississippi with numerous green dots indicating the locations of traffic signals. Major cities and towns are labeled, including Memphis, Jackson, and Hattiesburg. The map interface includes a search box and map controls.



Current Progress



Current Progress

Began in April
2021

~85% Complete
(172 out of 199
Intersections)

Conflict Monitor
Tester Recently
Sent Off for
Calibration

On Track to
Wrap in June





MDOT TRAFFIC SIGNAL PREVENTATIVE MAINTENANCE PROGRAM

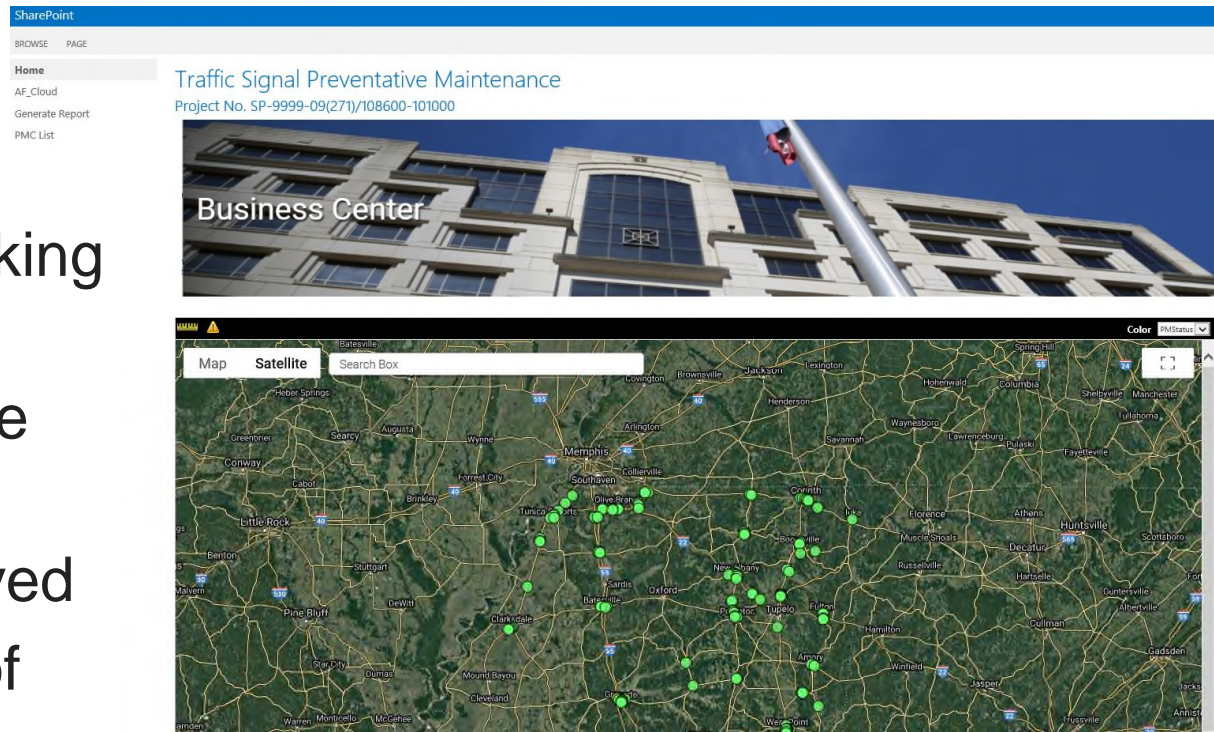
ID	Title	District	Intersection	County	Date	City	SignalDesignation	Latitude	Longitude	PMStatus	ControllerModel	ControllerSerialNumber	ControllerDateTSC	ControllerDate	VacuumCabinet	AuxiliaryRelays	CabinetFilter	MainLightningArrest
13	MDOT	1	MS 14 @ Spring Avenue	Winston	3/29/2021	Louisville	S0066	33.123589	-89.057297	Complete	M60	164564	D 19	Correct Date, Time and DST	Completed	Not Working	Replaced	Working
14	MDOT	1	MS 14 @ MS 397	Winston	3/29/2021	Louisville	S0065	33.123547	-89.055397	Complete	M60	164554	D 19	Correct Date, Time and DST	Completed	N/A	Replaced	Working
15	MDOT	1	MS 14 @ Columbus Avenue	Winston	3/30/2021	Louisville	S0064	33.123741	-89.053108	Complete	M60	164561	D19	Correct Date, Time and DST	Completed	N/A	Replaced	Working
16	MDOT	1	MS 50 @ Eshman Ave	Clay	3/31/2021	West Point	S0972	33.607189	-88.632919	Complete	M60	163543	M18	Correct Date, Time and DST	Completed	N/A	Replaced	Working
17	MDOT	1	MS 50 @ Cottrell St	Clay	3/31/2021	West Point	S1122	33.607033	-88.646935	Complete	M60	163544	M18	Correct Date, Time and DST	Completed	N/A	Replaced	Working
18	MDOT	1	MS 50 @ Commerce St	Clay	3/31/2021	West Point	S1121	33.606895	-88.648544	Complete	M60	160400	C18	Correct Date, Time and DST	Completed	N/A	Replaced	Working
19	MDOT	1	MS 50 @ Division St	Clay	4/1/2021	West Point	S1120	33.607239	-88.650620	Complete	M60	162793	K18	Set Date, Time and DST	Completed	N/A	Replaced	Working
20	MDOT	1	US 45 Alt @ Industrial Access Rd	Clay	4/1/2021	West Point	S0997	33.626617	-88.658890	Complete	M60	165713	H19	Correct Date, Time and DST	Completed	N/A	Replaced	Working
21	MDOT	1	MS 50 @ West Broad Ext	Clay	4/1/2021	West Point	S1119	33.607483	-88.656784	Complete	M60	160309	C18	Correct Date, Time and DST	Completed	N/A	Replaced	Working

Benefits of the New Approach



Benefits of the New Approach

- Digital Records
- Geospatial Database
- Realtime Progress Tracking for MDOT
- Categorical Maintenance Needs
- ~475 Person-Hours Saved
- At Least 1,000 Sheets of Paper Saved 😊





MDOT TRAFFIC SIGNAL PREVENTATIVE MAINTENANCE PROGRAM

A	B	C	D	E	F	G	H	I	J	K	L	M
1	Title	District	Intersection	County	City	SignalDesignation	Latitude	Longitude	LensCondition	LensConditionNotes	SignalHeadCondition	VehiclePedestrianSignalHeadsNote
2	69	MDOT 1	MS 178 @ Camp Ave.	Union	New Albany	S0070	34.492710	-89.006844	Partially Lit-See Notes	WB Green Partially Lit.	All In Good Condition	
3	52	MDOT 1	US 45 NB Ramp @ MS 145	Lee	Saltillo	S1001	34.378445	-88.696640	Partially Lit-See Notes	SB red lens partially lit	All In Good Condition	
4	31	MDOT 1	US 45 @ Columbus St.	Monroe	Aberdeen	S0001	33.815212	-88.547775	Completely Dark-See Notes		All In Good Condition	Walk/Don't Walk not working on SE Pole.Don't Walk not working
5	30	MDOT 1	US 45 @ Matubba Street	Monroe	Aberdeen	S0002	33.814693	-88.552467	Partially Lit-See Notes	NB green ball partially lit	All In Good Condition	
6	33	MDOT 1	MS 145 @ Matubba Street	Monroe	Aberdeen	S0004	33.825657	-88.552490	Partially Lit-See Notes	EB Approach Red and Green ball Partially Lit.	All In Good Condition	
7	32	MDOT 1	US 45 @ Meridian Street	Monroe	Aberdeen	S0003	33.815079	-88.543907	Partially Lit-See Notes		All In Good Condition	WB and SB approaches red balls partially lit.
8	98	MDOT 1	MS 15 @ N. Main Street	Tippah	Ripley	S0081	34.738811	-88.950287	Completely Dark-See Notes	2 Red Ball LED Dark	Visor(s) Missing - See Notes	EB Approach Vissor Missing
9	41	MDOT 1	US 278 @ Main St and 3rd Street	Monroe	Amory	S0007	33.980206	-88.484177	Partially Lit-See Notes	WB at Third, Green Partially Lit, EB at Main Red Partially Lit.		
10	43	MDOT 1	I - 22 Eastbound Ramp @ MS 25	Itawamba	Fulton	S0060	34.240753	-88.402496	Good Condition		Backplate(s) Broken - See Notes	EB Backplate Broke.
11	96	MDOT 1	MS 15 @ S. Main Street	Tippah	Ripley	S0082	34.723289	-88.948677	Good Condition		Visor(s) Missing - See Notes	SB approach Visor Missing.
12	97	MDOT 1	MS 15 @ MS 4	Tippah	Ripley	S0080	34.730000	-88.945877	Good Condition		Visor(s) Missing - See Notes	SB Visor Missing.
13	109	MDOT 1	US 72 @ Harper Rd	Alcorn	Corinth	S0048	34.915295	-88.503975	Good Condition		Visor(s) Missing - See Notes	EB approach- visor missing
14	84	MDOT 1	MS 30 W @ Munsford Drive	Union	New Albany	S1116	34.491871	-89.058151	Good Condition		Backplate(s) Broken - See Notes	Eastbound and Southbound Backplates Broken.
15	67	MDOT 1	MS 15 @ MS 30 East	Union	New Albany	S0068	34.491459	-88.995239	Good Condition		Backplate(s) Broken - See Notes	NB Backplate Broke
16	89	MDOT 1	MS 145 @ MS 4	Prentiss	Booneville	S1002	34.684242	-88.561340	Good Condition		Backplate(s) Broken - See Notes	EB Backplate Broken
17	101	MDOT 1	MS 785 @ Filmore	Alcorn	Corinth	S1064	34.929031	-88.518341	Partially Lit-See Notes	NB 2 Red Balls Partially Lit	Visor(s) Missing - See Notes	NB Approach 1 Visor Missing and 1 Backplate Broken.
18	60	MDOT 1	MS 9 @ Main Street	Pontotoc	Pontotoc	S0079	34.253109	-89.000381	Good Condition		Visor(s) Missing - See Notes	2 Visors Missing Eastbound.
19	88	MDOT 1	MS 145 @ MS 370 W	Prentiss	Baldwyn	S0009	34.509743	-88.635544	Good Condition		Visor(s) Missing - See Notes	NB Approach Type 1 Head Missing 1 Visor and 1 broken.
20	57	MDOT 1	MS 15 @ McCord Road	Pontotoc	Pontotoc	S0078	34.284397	-89.026047	Good Condition		Backplate(s) Broken - See Notes	WB type 3 backplate broken. NB Type 1 Mis-Aligned
21	93	MDOT 1	MS 145 @ Cunningham Blvd	Prentiss	Booneville	S0012	34.667351	-88.565178	Good Condition		Backplate(s) Broken - See Notes	Backplate Broken on EB Approach
22	98	MDOT 1	MS 15 @ N. Main Street	Tippah	Ripley	S0081	34.738811	-88.950287	Completely Dark-See Notes	2 Red Ball LED Dark	Visor(s) Missing - See Notes	EB Approach Vissor Missing
23	42	MDOT 1	MS 25 @ Pierce Town Rd	Itawamba	Fulton	S0936	34.238522	-88.401909	Good Condition		Backplate(s) Broken - See Notes	SB Backplate Broken
24	48	MDOT 1	MS 145 @ Main / Palmetto (one controller for both)	Lee	Verona	S0159	34.193043	-88.719833	Completely Dark-See Notes	Palmetto - EB red lens out	Backplate(s) Broken - See Notes	Main St- NB backplate broken
25	24	MDOT 1	US 45 Alt @ Church Hill Road	Clay	West Point	S0163	33.593018	-88.659698	Partially Lit-See Notes		Visor(s) Missing - See Notes	NB yellow out, Red WB partially litNB and SB visors missing
26	35	MDOT 1	MS 8 @ MS 389	Chickasaw	Houston	S0061	33.896549	-89.000015	Good Condition		Visor(s) Broken - See Notes	WB Type 7 visors broken and not attached to tether.
27	61	MDOT 1	MS 15 @ MS 336	Pontotoc	Pontotoc	S0077	34.257263	-89.017899	Good Condition		Visor(s) Missing - See Notes	3 Visors Missing and 1 Broken.
28	107	MDOT 1	US 45 @ US 72	Alcorn	Corinth	S0051	34.930721	-88.546494	Partially Lit-See Notes	EB - 1 green, 1 yellow, 1 red - pixels out	Backplate(s) Broken - See Notes	NW pole - backplate broken
29	70	MDOT 1	MS 178 @ Moss Hill Dr	Union	New Albany	S0072	34.495495	-89.014549	Good Condition		Visor(s) Missing - See Notes	EB Type 1 Visor Missing.
30	59	MDOT 1	MS 9 N @ Magnolia Way	Union	Blue Springs	S1073	34.385048	-88.893150	Good Condition		Backplate(s) Broken - See Notes	EB Backplate Broken
31	29	MDOT 1	MS 182 @ MS 9	Webster	Eupora	S0054	33.540863	-89.267479	Partially Lit-See Notes	WB yellow balls partially lit	See Notes	Heads faded, old
32	85	MDOT 1	MS 30 W @ Park Plaza	Union	New Albany	S0075	34.496548	-89.033585	Partially Lit-See Notes	Red partially lit on southbound approach.	Visor(s) Missing - See Notes	EB visor missing on type 1 head.
33												
34												
35												
36												
37												
38												
39												
40												

Future Uses of the Database



Future Uses of the Database



Asset Management



Easily Identify Previous Maintenance Dates and Efforts



Track Failure Rate of Specific Components



Easily Create and Share Maps and Data



Capital Planning



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