SW Region Safety Program

Presented By:
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MY BACKGROUND

Came from the Maintenance Section

Background in ITS, Tunnels, and TSM&O.

No design experience

What is GDCP?

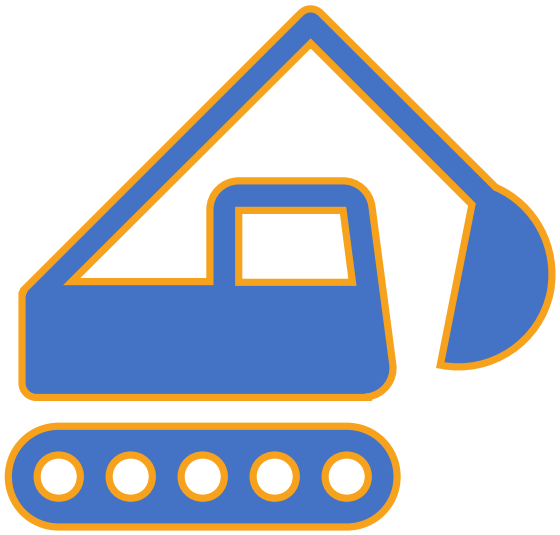
Project Estimating? CE&I/Indirect Costs/Inflation

What is CPMS and how do I use it?

Never had the problem of "This is the way we always do it". I tend to see things the way I think we should be doing it.

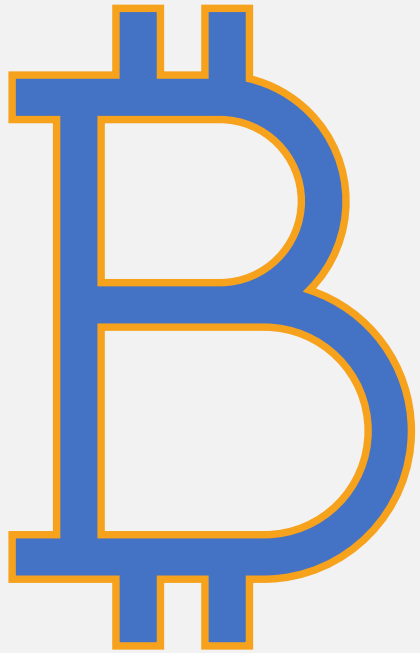
NOTABLE DIFFERENCES ABOUT THE SW REGION SAFETY ENGINEER AND OUR PROGRAM

- Only Region Safety Engineer that works in the Pre-Construction section. Everyone else reports to their Assistant Region Engineer or TSM&O Engineer.
- The vast majority (99%) of our projects are design/let style. Not force account.
- As such, our projects tend to be large cost projects with multi-year time lines.



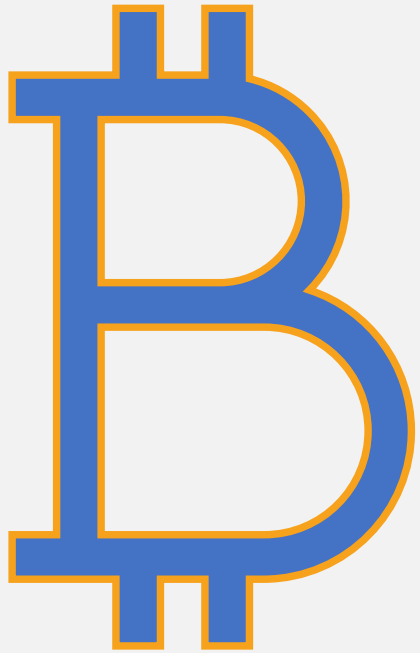
WHAT DOES A SAFETY ENGINEER DO?

- Some people think that the safety engineer's sole use is to chase after the $3 Million in dedicated funding each Region gets every year. Honestly, I thought so too; until I created $15 Million in projects in 3 months. That is enough to last us for 5 years in level funding.



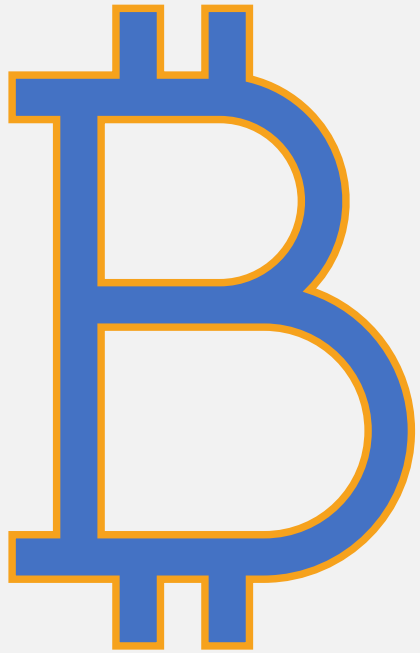
WHAT DOES A SAFETY ENGINEER DO?

- What I have found myself spending much more time doing is:
  - Evaluating fatal and highly publicized crashes for quick improvements and responses
  - Working to give input on scopes and plan reviews to have safety improvements made with other funding sources. I do more safety improvements with just striping, markings, signs, RPMS, and delineator systems than with any hard physical infrastructure.
  - Working to change the culture of safety from the inside out.
  - Taking deep dives into any safety concerns. Heavily trained in specialized countermeasures. Keeps other personnel from having to dabble infrequently in safety.



WHAT DOES A SAFETY ENGINEER DO?

- Act as a bridge between Administration, Operations and Maintenance, and Pre-Construction.



STATEWIDE HSIP BUDGET BREAKDOWN

TOTAL HSIP Dollars per year	**$**	**44,000,000.00**
Rail Safety	*$*	*5,000,000.00*
Safety Widening Guestimate	$	18,000,000.00
HRRR Guestimate	$	4,200,000.00
HSIP funding left to split between Regions for Safety Projects	$	*16,800,000.00*

INTERESTING CHALLENGES ENCOUNTERED

- Safety Edge Paving on asphalt layers are heavily resisted in Alabama.
- Statewide Scoring Policy
- Who is responsible for stop signs and object markers related to local roads that intersect state routes? What happens if the State wants to do an improvement project with HSIP? Who maintains? Who is liable afterwards?

DATA

- Crash Data is inaccurate, especially in regards to location accuracy.
- Today's crash data is good enough to only use for high level planning, not hot spot analysis.
  - Intensive data refinement (location adjustment) needed to identify/justify individual hot spot safety improvements.

HSIP PROJECTS OVER 2.5 YEARS

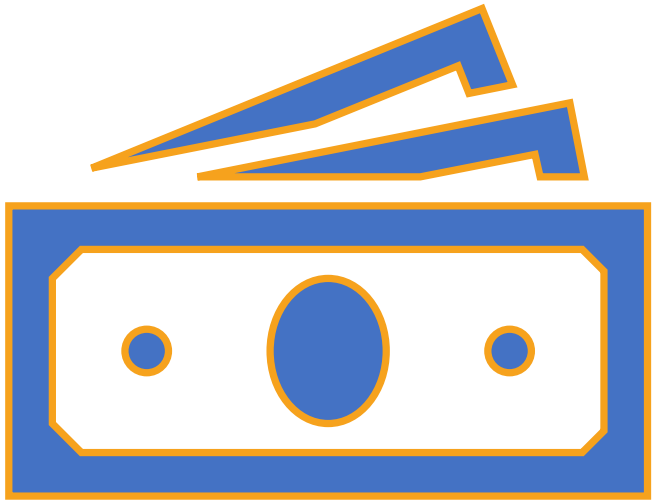
- Over 100 sites/projects have been evaluated and reviewed including submissions from local agencies.
- 20 HSIP applications have been submitted.
- 19 have been approved
- $27.5 Million has been approved.
- $10.5 Million has been spent to date.
- There is generally only $3M per year available to fund safety projects in our Region. That means we currently have 6 years worth of commitments if no additional funding can be shifted around within the State.
- Average Project cost was $1.5 Million for FY 2020
- Average Project cost is $400 Thousand for FY 2021

RECOMMENDATIONS

Have a mix of project types ready every year with a healthy balance of small, medium, and large costs. Make an attempt to actually do more low and medium cost projects.

Create additional pathways for HSIP funds to be spent directly on the roadway.

- Consider the use of IDIF contracts
- Consider the creating an HSIP funded match program for low and medium cost safety improvements to be included in resurfacing projects.



SAFETY BY THE NUMBERS

Takeaways

- Total of approximately 24 thousand crashes in my Region in 2019.
- That's over 67 crashes on average per day.

General Crash Numbers

2019 Crash Data Geographic Region	2018 Population	Total Crashes (All Routes)	Total Crashes (State Routes)
SW Region	784,703	24,564	11,554
Mobile Area	680,804	22,864	10,499
Mobile	413,757	15,741	5,573
Baldwin	218,022	5,938	4,076
Conecuh	12,277	391	296
Escambia	36,748	794	554
Grovehill Area	103,899	1,639	1,277
Clarke	23,920	400	269
Washington	16,378	206	116
Monroe	21,067	351	215
Choctaw	12,841	199	118
Marengo	19,066	333	233
Wilcox	10,627	150	104

SAFETY BY THE NUMBERS

2019 Crash Data		KABCO INDEX					
Geographic Region	2018 Population	Fatal Injury (K)	Incapacitating Injury (A)	Non-Incapacitating Injury (B)	Possible Injury (C)	Property Damage Only (PDO)	Unknown
SW Region	784,703	155	629	2,136	2,309	18,713	622
Mobile Area	680,804	122	524	1,863	2,106	17,701	548
Mobile	413,757	74	277	1,221	1,481	12,375	313
Baldwin	218,022	38	180	531	519	4,508	162
Conecuh	12,277	3	18	34	41	282	13
Escambia	36,748	7	49	77	65	536	60
Grovehill Area	103,899	27	101	267	201	971	72
Clarke	23,920	10	15	59	45	235	36
Washington	16,378	3	23	46	11	119	4
Monroe	21,067	3	13	53	37	232	13
Choctaw	12,841	3	14	51	16	112	3
Marengo	19,066	3	25	42	63	190	10
Wilcox	10,627	5	11	16	29	83	6

SAFETY BY THE NUMBERS

Drugs and Alcohol			Distracted Driving								Roadway Condition				Lighting Conditions					Roadway Geometry					
DUI	Drug Related	Alcohol Related	Distracted by Passenger	Distracted by Communication Device	Distracted by other Electronic Device	Distracted by Fallen Object	Fatigued/Asleep	Distracted by Insect/Reptile	Other Distraction Inside the Vehicle	Other Distraction outside the vehicle	Dry	Wet	Water Buildup	Muddy Sand/Dirt/Gravel	Dawn	Daylight	Dusk	Dark (Not Lighted)	Dark (Spot illumination/Unknown)	Straight and Level	Straight with Vertical	Curve and Level	Curve with Vertical	Vertical*	Horizontal*
914	236	708	223	349	132	132	524	20	881	705	19413	3944	15	14	356	17855	813	2161	3249	18656	2590	1189	937	3540	2126
824	214	624	204	327	123	127	427	19	813	668	18091	3692	12	11	324	16779	762	1796	3138	17708	2293	1038	755	3060	1793
435	120	325	124	182	60	80	210	10	409	361	12313	2745	9	4	231	11523	566	945	2429						
317	78	255	64	116	56	37	147	8	344	290	4981	776	3	5	61	4488	169	567	641						
19	1	15	7	9	2	4	27	0	15	3	308	77	0	0	11	245	8	110	15						
53	15	44	9	20	5	6	43	1	45	14	489	94	0	2	21	523	19	174	53						
90	22	69	19	22	9	5	97	1	68	37	1322	252	3	3	32	1076	51	365	111	948	297	151	182	480	334
13	5	9	1	1	1	0	16	1	10	10	296	76	0	1	2	270	18	57	38						
10	1	10	4	5	4	1	14	0	11	7	158	44	1	1	9	138	3	53	3						
22	5	18	6	10	0	1	13	0	16	5	297	41	0	1	7	242	8	71	23						
19	7	14	4	2	1	1	14	0	12	3	162	33	1	0	8	115	10	56	10						
15	2	9	3	4	2	1	30	0	15	10	285	37	1	0	4	214	10	85	17						
11	2	9	1	0	1	1	10	0	4	2	124	21	0	0	2	97	2	43	6						

SAFETY BY THE NUMBERS

2019 Crash Data		E Manner of Crash										
Geographic Region	2018 Population	Single Vehicle Crash	Head On	Angle Oncoming (frontal)	Angle (front to side, Same direction)	Angle (front to side, Oppisite direction)	Rear End	Side Impact (angled)	Side Impact (90 degrees)	Sideswipe (Same direction)	Sideswipe (oppisite direction)	Causual Backing
SW Region	784703	3944	528	653	776	908	9644	2076	2168	2404	415	283
Mobile Area	680804	3291	489	609	728	836	9318	1950	2066	2325	372	251
Mobile	413757	1865	378	438	513	612	6424	1362	1475	1810	277	160
Baldwin	218022	936	93	143	185	176	2611	513	528	440	72	70
Conecuh	12277	196	6	8	7	7	67	11	14	45	9	3
Escambia	36748	294	12	20	23	41	216	64	49	30	14	18
Grovehill Area	103899	781	41	47	53	77	386	137	114	113	45	33
Clarke	23920	129	8	11	17	19	90	43	26	35	5	4
Washington	16378	100	4	5	4	9	32	16	17	6	4	1
Monroe	21067	132	12	12	10	13	83	21	20	12	8	12
Choctaw	12841	104	5	3	5	11	25	11	7	6	13	2
Marengo	19066	119	5	8	10	16	67	26	22	16	9	11
Wilcox	10627	69	5	5	2	4	29	9	10	4	4	2

SAFETY BY THE NUMBERS

What is causing all of the crashes?

SAFETY BY THE NUMBERS

Road Segments or Intersections?

- Definitely Intersection driven in Mobile County.
- Leaning towards Intersections in Baldwin County
- Overall, crashes at intersections make up 52.4% of all crashes. In Mobile County alone, crashes at signalized intersections make up 37% of all crashes in the Region…

2019 Crash Data		At Intersection	
Geographic Region	2018 Population	Yes, Crash Occurred at Intersection	No, Crash did not Occur at Intersection
SW Region	784703	12,876	9,983
Mobile Area	680804	12,192	9,042
Mobile	413757	9,085	6,029
Baldwin	218022	2,748	2,311
Conecuh	12277	78	228
Escambia	36748	281	414
Grovehill Area	103899	644	921
Clarke	23920	228	167
Washington	16378	57	149
Monroe	21067	138	201
Choctaw	12841	64	135
Marengo	19066	100	181
Wilcox	10627	57	88

WHAT I LIKE ABOUT THIS…

Intersection crashes can be the cheapest and most cost efficient safety projects available to implement. They also tend to provide capacity and efficiency gains as well.

SAFETY BY THE NUMBERS

Intersection Crashes broken down.

- Crashes at traffic signals in Mobile County account for 74% of all crashes at traffic signals.
- Can anyone tell us what a lane control device is???
- What intersection types have no signals, or stop/yield signs? More work is needed to investigate this.

2019 Crash Data		Traffic Control								
Geographic Region	2018 Population	Signalized Intersections	No Controls Present	Flashers	Lane Control Device	In Work Zone	In School Zone	Stop Sign	Yield Sign	At Rail Road
SW Region	784,703	4,671	4,797	95	2,104	46	36	1,928	508	20
Mobile Area	680,804	4,587	4,462	89	2,052	43	26	1,793	495	16
Mobile	413,757	3,453	3,495	65	1,032	9	29	1,167	372	13
Baldwin	218,022	1,087	842	23	1,012	13	7	531	118	0
Conecuh	12,277	9	35	0	1	17	0	33	5	1
Escambia	36,748	38	90	1	7	4	0	62	0	2
Grovehill Area	103,899	97	375	6	52	3	0	135	13	4
Clarke	23,920	37	134	2	0	0	0	32	9	2
Washington	16,378	3	30	0	0	1	0	11	0	1
Monroe	21,067	21	80	0	1	1	0	34	0	0
Choctaw	12,841	6	23	1	23	1	0	14	0	0
Marengo	19,066	11	45	0	0	0	0	28	3	1
Wilcox	10,627	6	23	3	0	0	0	16	1	0

SAFETY BY THE NUMBERS

2019 Crash Data		Road Segments				Stop/Yield Controlled Intersections			Signalized Intersections		
Geographic Region	2018 Population	Single Vehicle Run Off Road	Head on	Angle	Rear end	Turning	Broadside	Rear end	Turning	Broadside	Rear end
SW Region	**784,703**	2,225	575	2,835	3,891	402	891	518	648	952	2,522
Mobile Area	**680,804**	1,730	504	1,598	3,743	383	841	484	634	930	2,484
Mobile	413,757	926	359	1,136	2,537	275	548	335	495	677	1,849
Baldwin	218,022	432	111	398	1,064	89	259	139	131	241	616
Conecuh	12,277	158	16	12	51						
Escambia	36,748	214	18	52	91						
Grovehill Area	**103,899**	553	74	127	170	21	55	36	15	22	48
Clarke	23,920	62	11	90	33						
Washington	16,378	87	8	17	25						
Monroe	21,067	99	17	27	39						
Choctaw	12,841	84	15	12	14						
Marengo	19,066	107	12	22	26						
Wilcox	10,627	56	8	7	11						
CITY OF MOBILE		496	267	937	2,119	214	423	283	386	561	1,504
City of Huntsville		236	96	287	686	110	261	294	417	466	1,497
City of Tuscaloosa		183	70	265	536	99	235	308	200	381	1,010
City of Montgomery		354	136	556	970	96	568	416	177	718	1,430
City of Birmingham		490	227	545	1,349	244	637	287	732	1,127	1,807

CURRENT SAFETY FOCUS

Developing more low and medium cost projects

Focus on improving intersection safety

Focus on T-Intersections and other stop controlled intersections. The average stop-controlled intersection can be made much safer with only $5-10K

Focus on turning lanes at unsignalized intersections.

CURRENT SAFETY FOCUS

Developing a safety match program for resurfacing projects.

Creating a T-Intersection Design Guide.

Investigating ID/IQ Contracts

Working with Law Enforcement Community

RTOP AND HSIP SIGNAL RETIMING PROGRAM

- RTOP program was developed by TSM&O to provide our Region with $2.6 Million over 5 years to upgrade and operate 130 signals on 3 corridors.
- Our Region applied for a $1.5 Million HSIP grant to retime all 415 traffic signals on State Routes regardless of who maintains them in the SW Region over 3 years.

RTOP AND HSIP SIGNAL RETIMING PROGRAM

- These two programs have now been combined. The effect is that within 2 years, we will have:

- Retimed all 415 traffic signals in the Mobile Area

- Repaired all detection

- 75% of the signals will receive an upgraded controller and cell modem.

QUESTIONS?