



# Congestion Component Update

September 21, 2018

# Workgroup feedback

- Reference speed needs to be revisited for non-freeways.
- Weekend factors may be less reliable as the weekday ones. Consider excluding weekend altogether.
- Possibly consider doing a tiered system for low volume roads.
- Level of congestion may vary significantly within one project, especially when project is long. How do we identify that?
- How is VHD calculated? Are they all based on speed data?

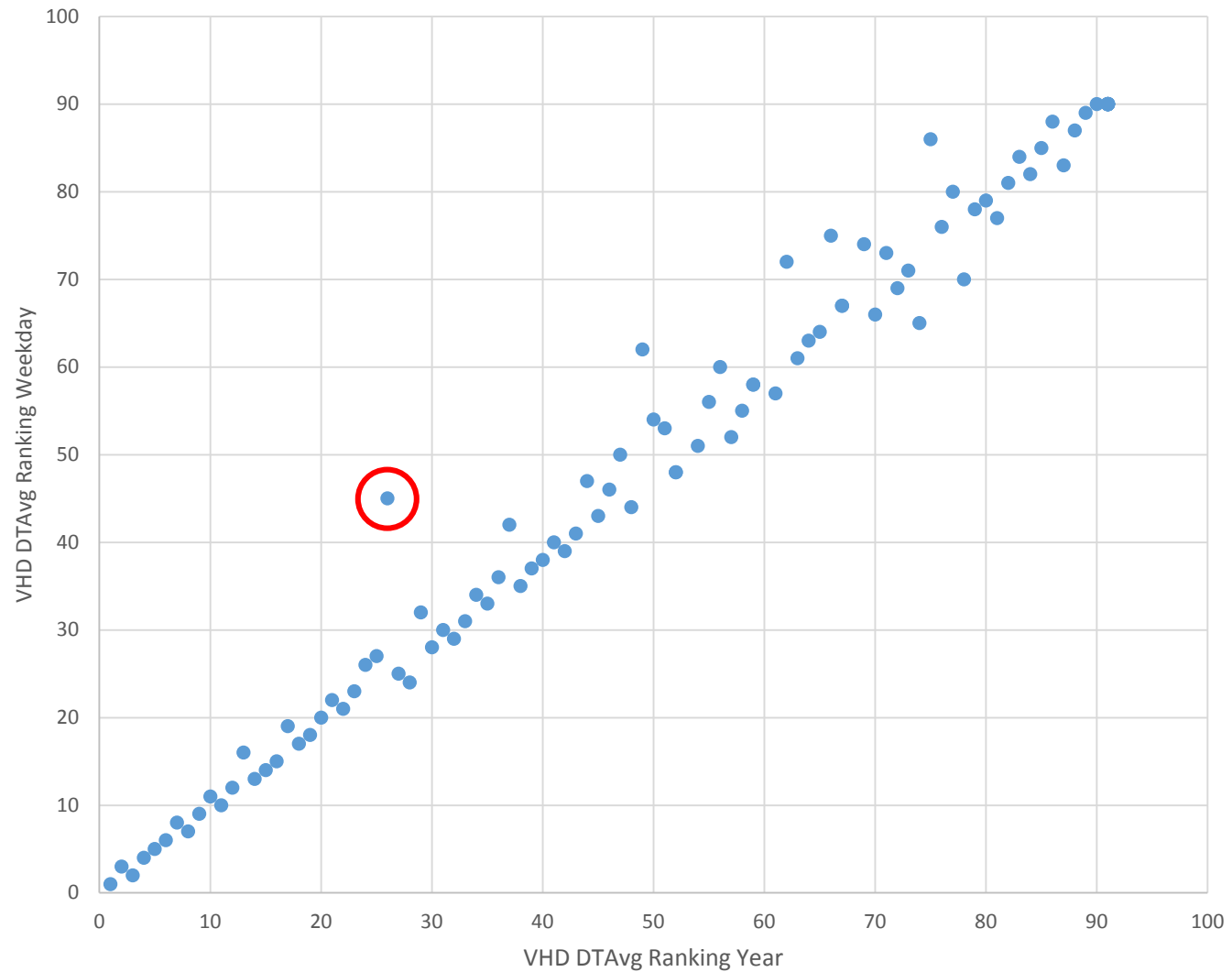
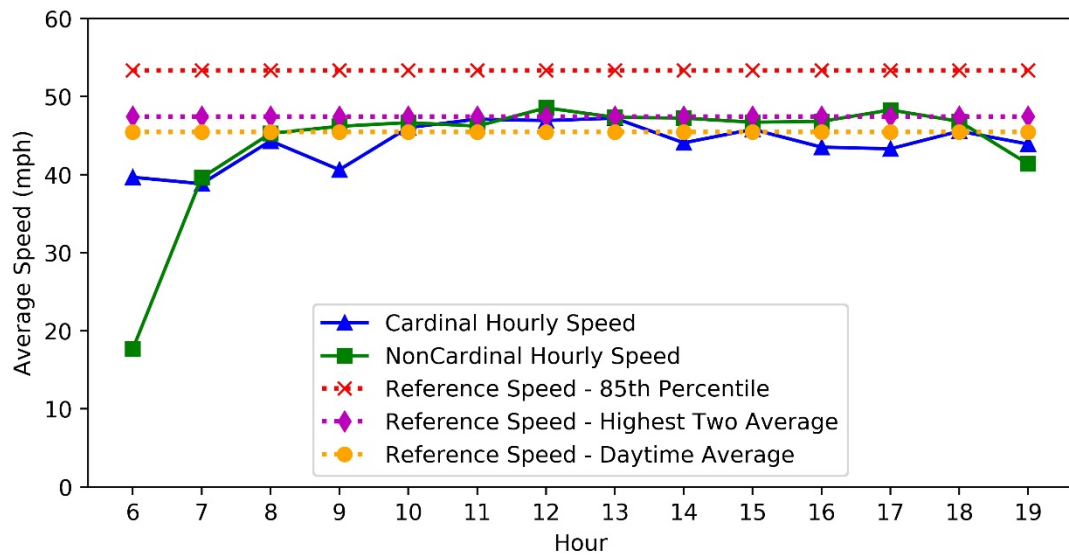
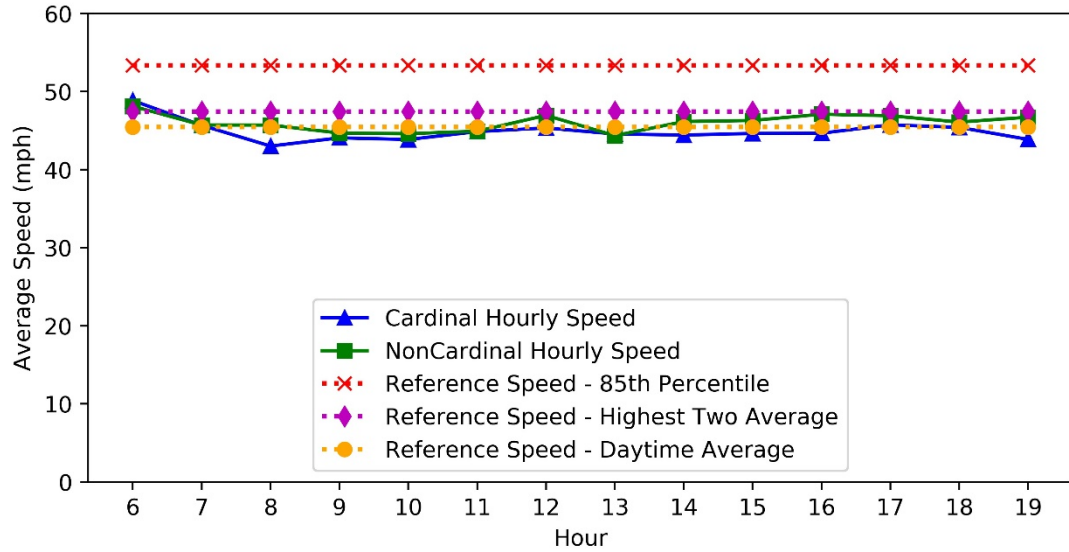
# Updates from the last version

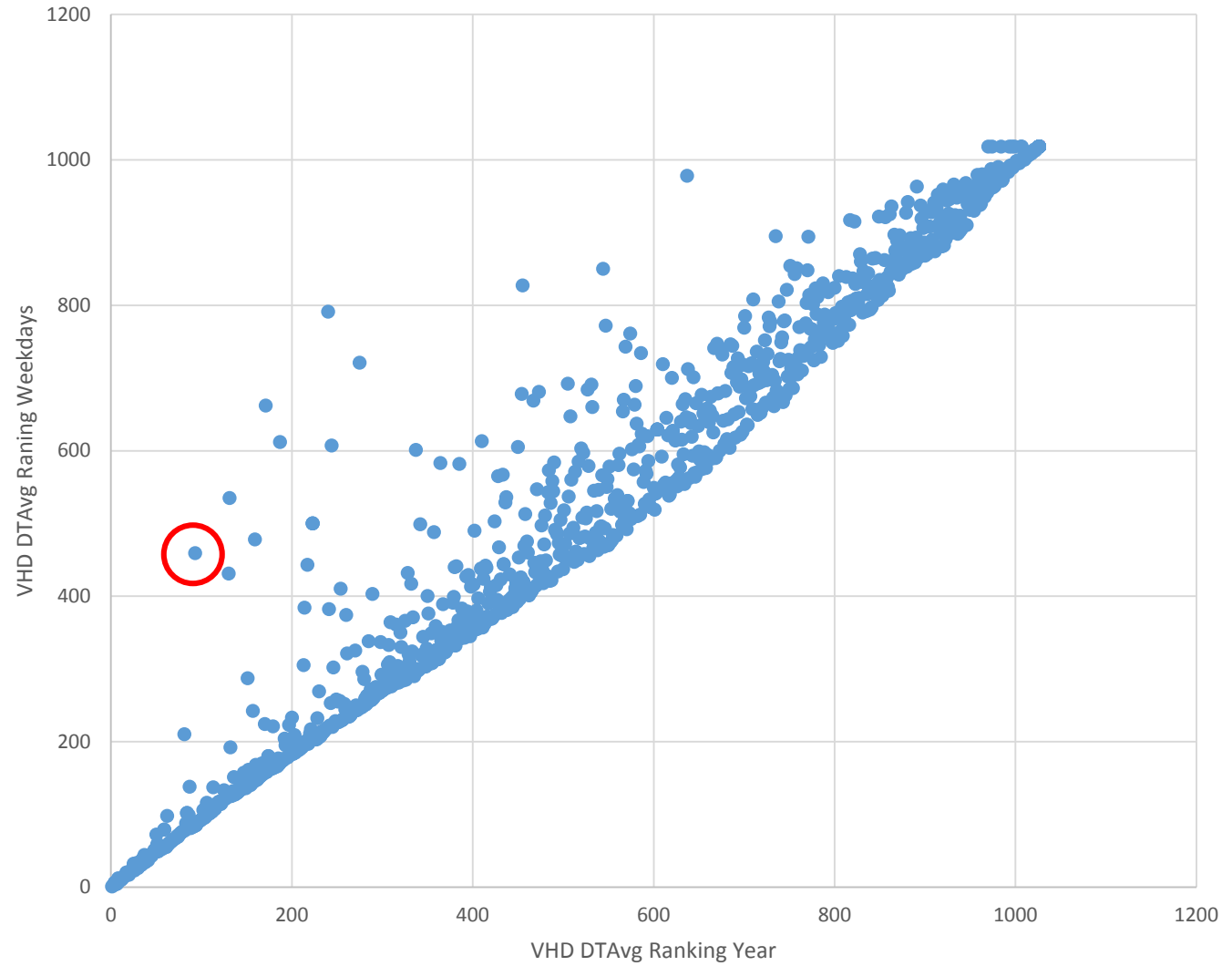
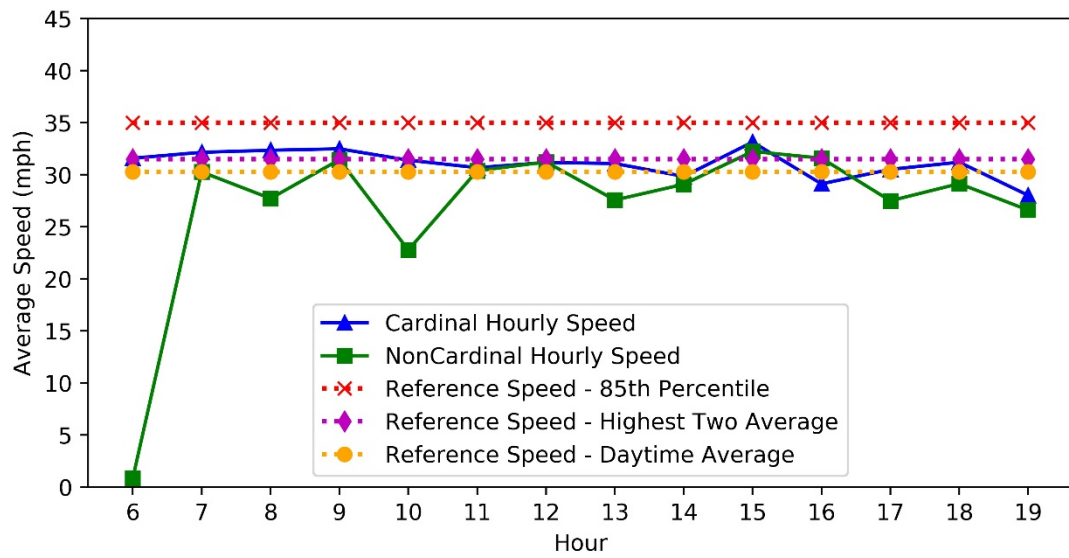
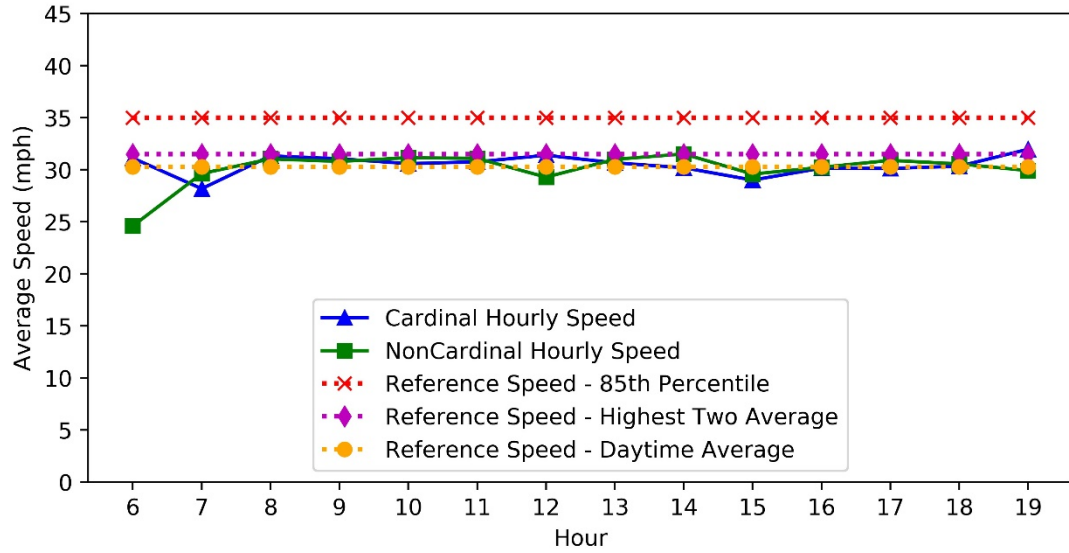
## Comments

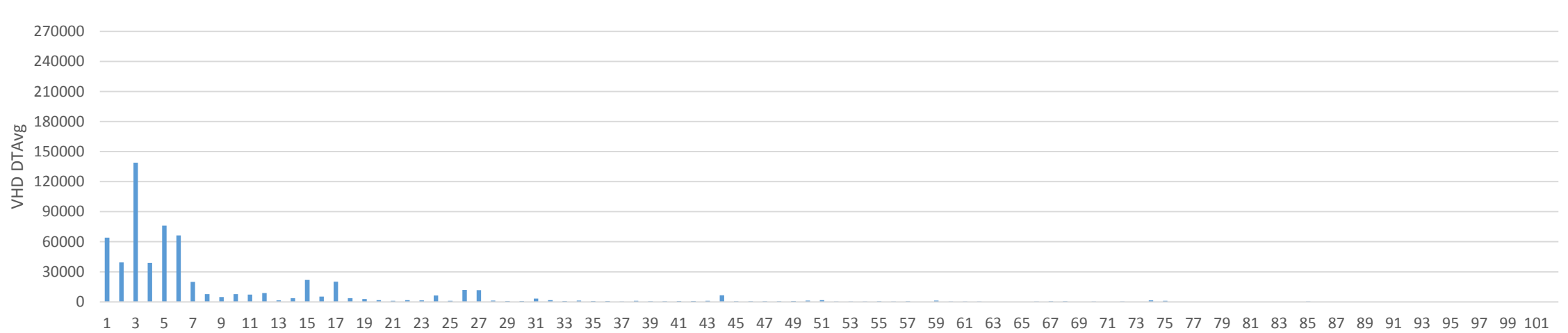
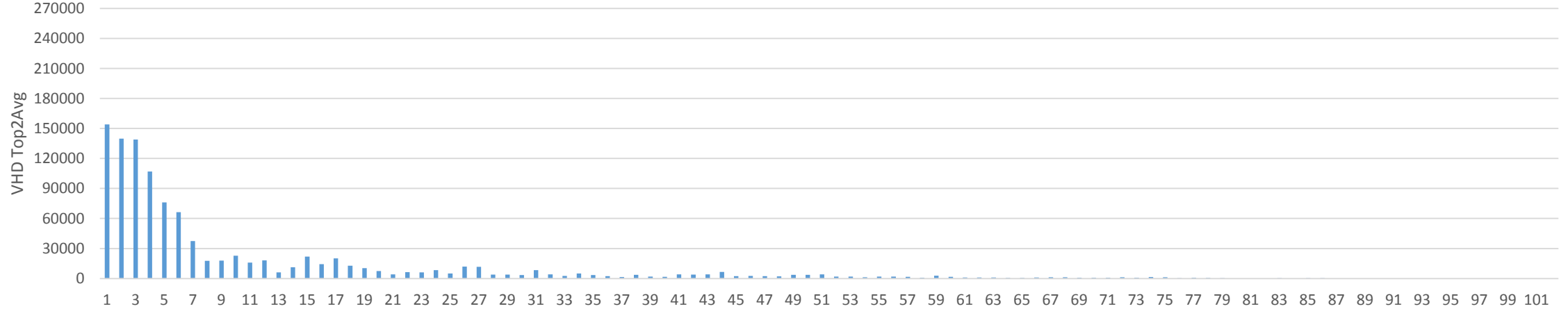
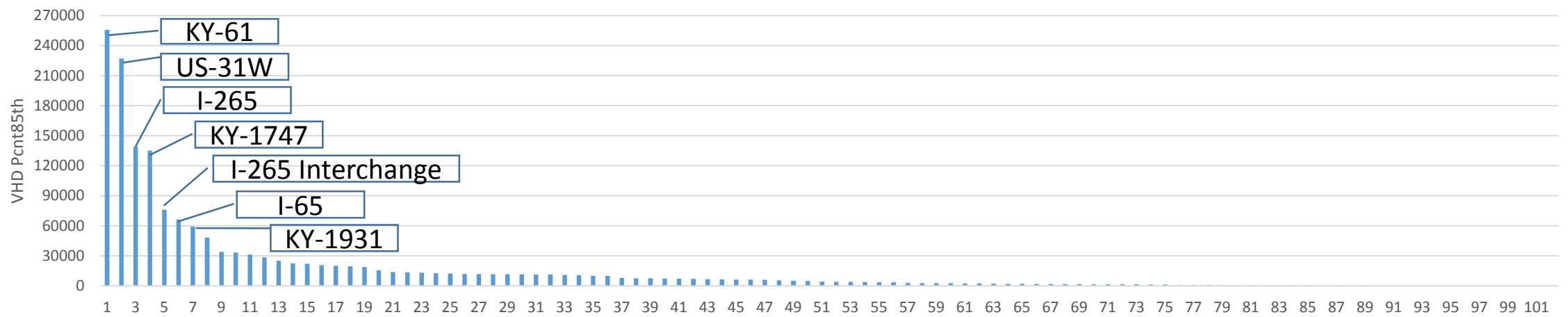
1. Reference speed too high for non-freeways
2. Weekend demand factors unreliable

## Update

1. Reference speed options
  - Average daytime (6am-8pm) hourly speed
  - Average of the two highest hourly speeds during the daytime
2. Use weekday data only for delay
3. Consider ramp queue spillover







# Top 5 with Old Method

Eval County	Eval Route	Length	Project Type	AADT	VSF	VSF-Scale	DHV	DHV-Scale	Congestion Measure	Old_Ranking	VHD_Scale	VHD_Pcnt85_Ranking	VHD_DTAvg_Ranking	VHD_Top2Avg_Ranking
Jefferson	056-I-0265-000	1	I-CHANGE RECONSTRUCTION(O)	82157	1.04	100.00	7887	98.98	99.8	1	94.0	5	2	5
Jefferson	056-I-0065-000	2.298	Reconstruction	144923	1.03	98.98	12318	100.00	99.2	2	75.0	6	3	6
Jefferson	056-I-0265-000	11.318	MAJOR WIDENING(O)	67796	0.88	96.94	6576	97.96	97.1	3	97.0	3	1	3
Jefferson	056-I-0071-000	4	Major widening	74051	0.84	95.92	6442	96.94	96.1	4	82.0	17	8	10
Bullitt	015-KY-0044-000	0.45	RECONSTRUCTION(O)	19337	0.95	97.96	1450	82.65	94.9	5	90.0	12	12	11

County: Jefferson

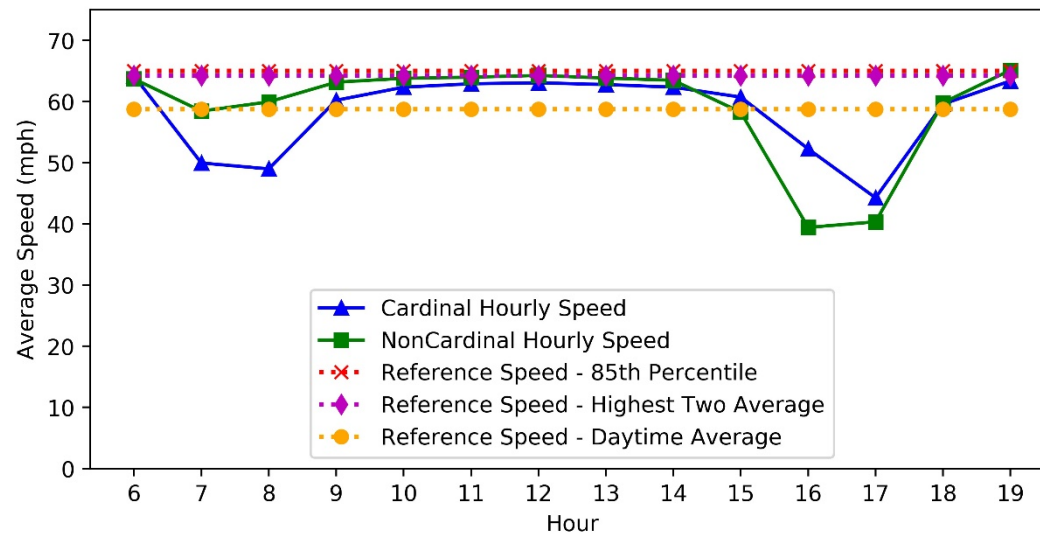
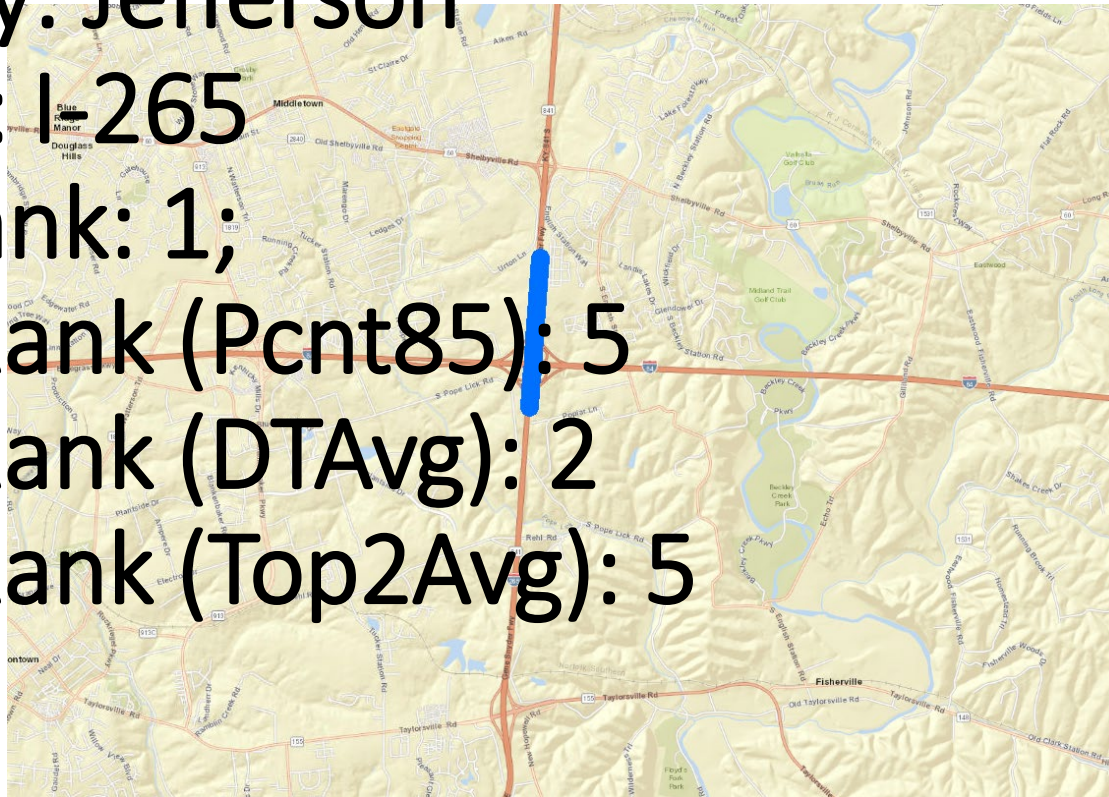
Route: I-265

Old Rank: 1;

New Rank (Pcnt85): 5

New Rank (DTAvg): 2

New Rank (Top2Avg): 5



Project Length	1
AADT	82157
Project Type	I-Change Reconstruction
VSF Scale	100.00
DHV Scale	98.98
Congestion Measure	99.8
VHD Scale	94



County: Jefferson

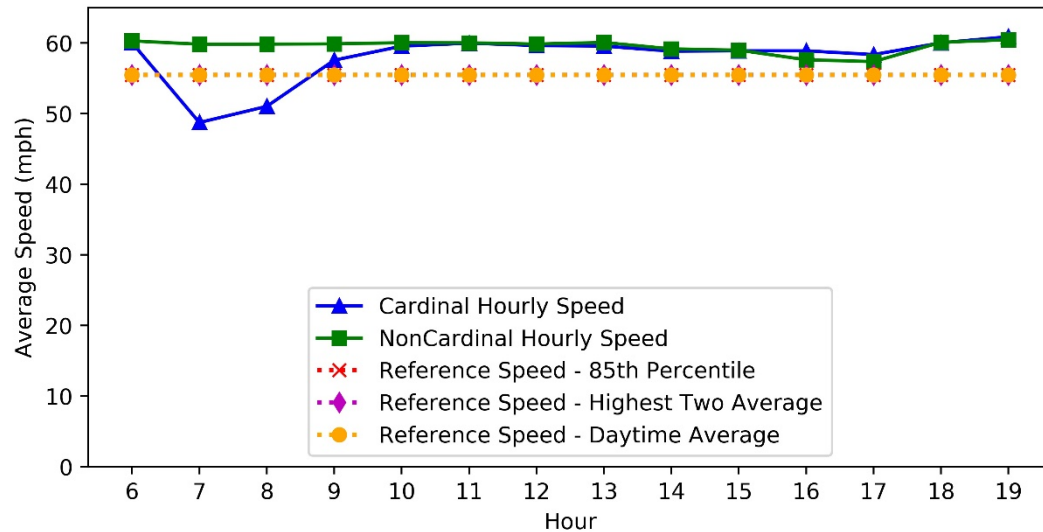
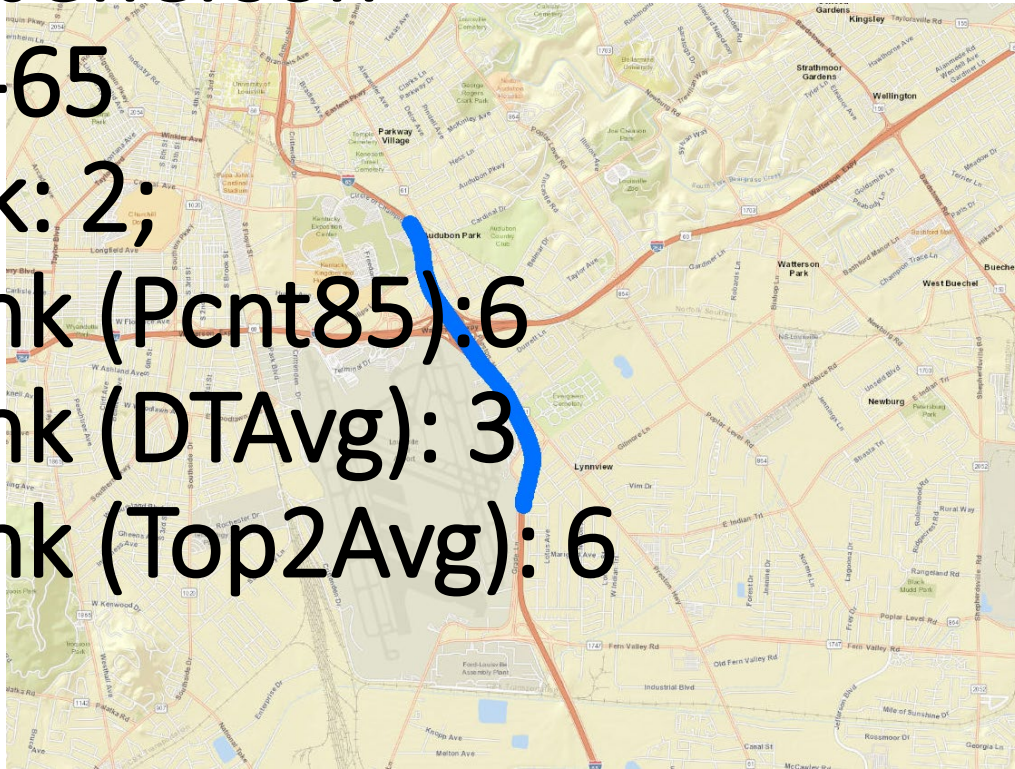
Route: I-65

Old Rank: 2;

New Rank (Pcnt85): 6

New Rank (DTAvg): 3

New Rank (Top2Avg): 6



Project Length	2.298
AADT	144923
Project Type	Reconstruction
VSF Scale	98.98
DHV Scale	100.00
Congestion Measure	99.2
VHD Scale	75.0

County: Jefferson

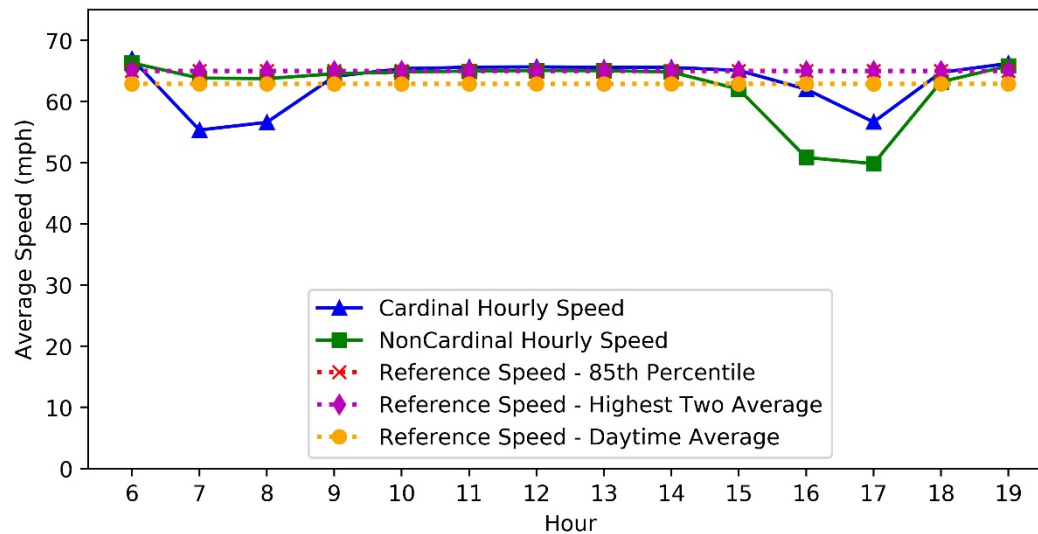
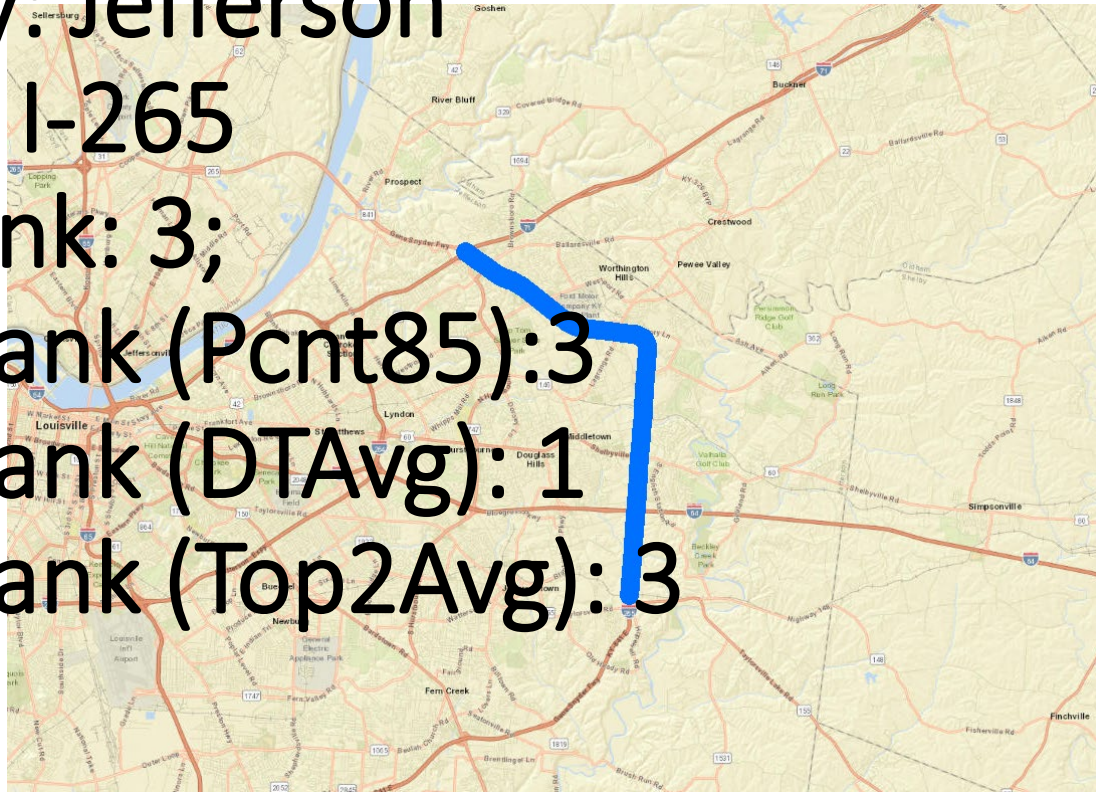
Route: I-265

Old Rank: 3;

New Rank (Pcnt85): 3

New Rank (DTAvg): 1

New Rank (Top2Avg): 3



<b>Project Length</b>	<b>11.318</b>
AADT	67796
Project Type	MAJOR WIDENING(O)
VSF Scale	96.94
DHV Scale	97.96
<b>Congestion Measure</b>	<b>97.1</b>
<b>VHD Scale</b>	<b>97.0</b>

# County: Jefferson

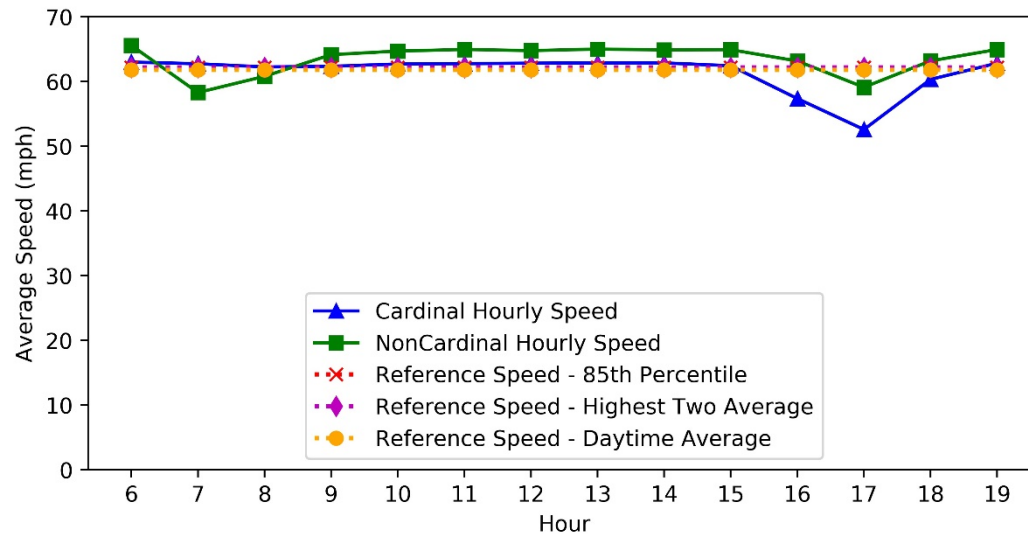
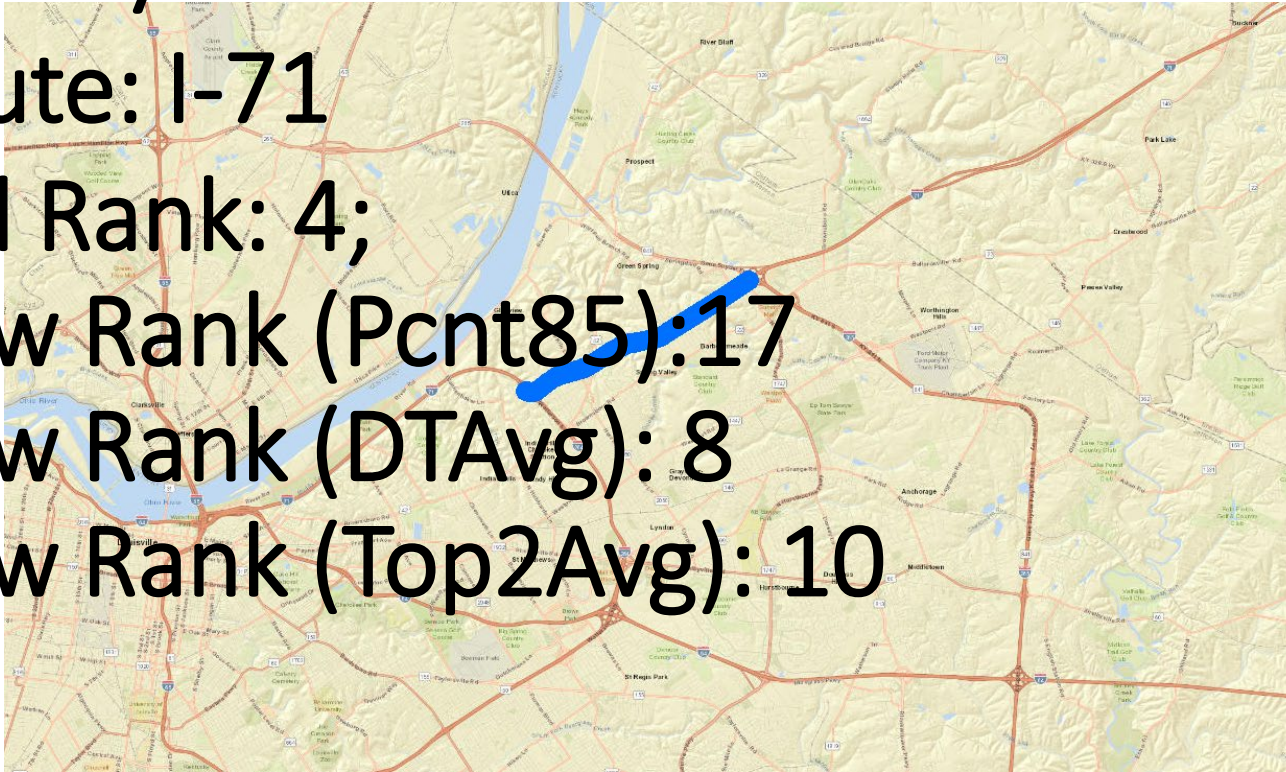
## Route: I-71

### Old Rank: 4;

### New Rank (Pcnt85): ~~17~~

### New Rank (DTAvg): 8

### New Rank (Top2Avg): 10



<b>Project Length</b>	<b>4</b>
AADT	74051
Project Type	Major widening
VSF Scale	95.92
DHV Scale	96.94
<b>Congestion Measure</b>	<b>96.1</b>
<b>VHD Scale</b>	<b>82.0</b>

County: Bullitt

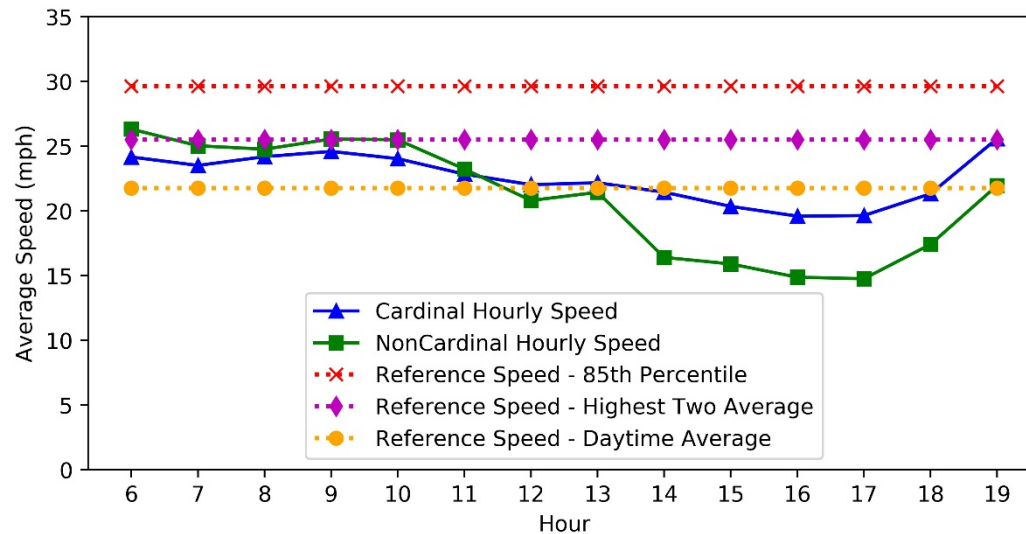
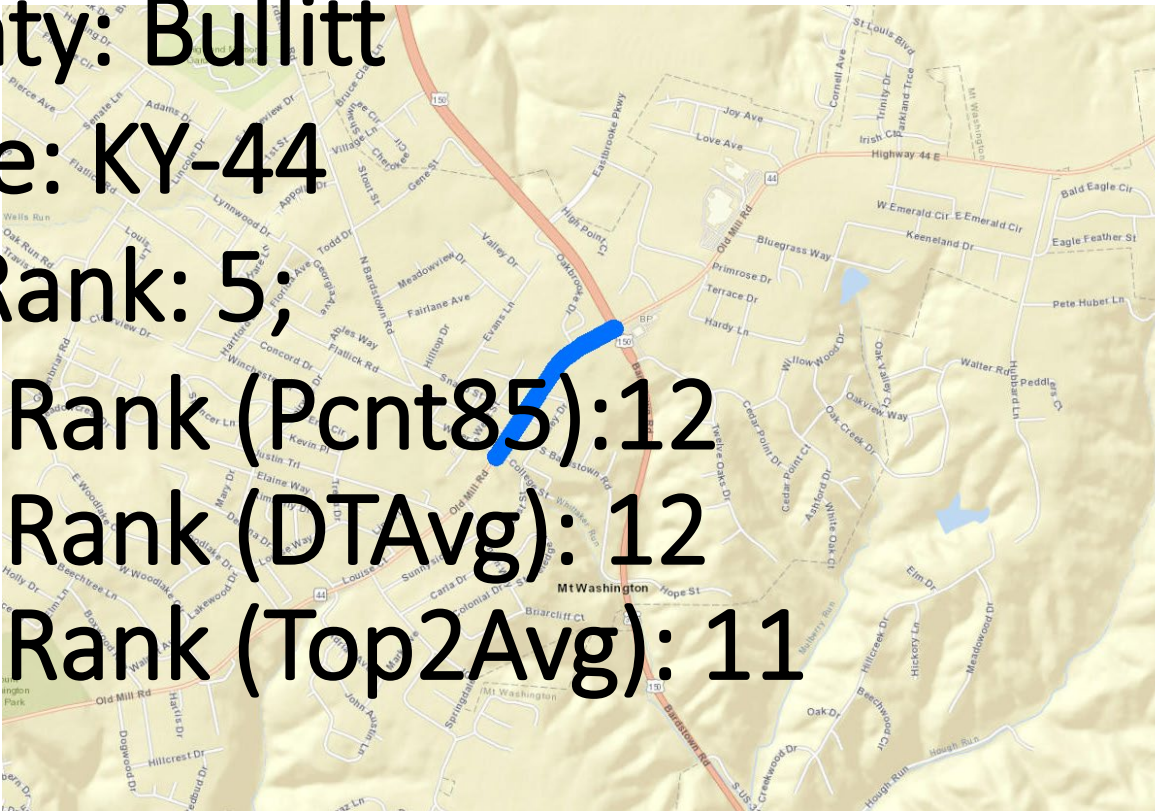
Route: KY-44

Old Rank: 5;

New Rank (Pcnt85): 12

New Rank (DTAvg): 12

New Rank (Top2Avg): 11



Project Length	0.45
AADT	19337
Project Type	RECONSTRUCTION (O)
VSF Scale	97.96
DHV Scale	82.65
Congestion Measure	94.9
VHD Scale	90.0

# Selected Projects w/ Large Drop in Ranking

Eval County	Eval Route	Length	Project Type	AADT	VSF	VSF-Scale	DHV	DHV-Scale	Congestion Measure	Old_Ranking	VHD_Scale	VHD_Pcnt85_Ranking	VHD_DTAvg_Ranking	VHD_Top2Avg_Ranking
Jefferson	056-I-0264 -000	1.7	RECONSTRUCTION(O)	59311	0.57	89.80	5041	95.92	91.0	7	67.0	26	10	17
Graves	042-CS-1082 -000	1.281	NEW ROUTE(O)	4449	0.72	94.90	427	38.78	83.7	14	48.0	55	53	50
Shelby	106-I-0064 -000	2.959	SAFETY(P)	41274	0.45	76.53	3962	93.88	80.0	17	28.0	74	30	59

County: Jefferson

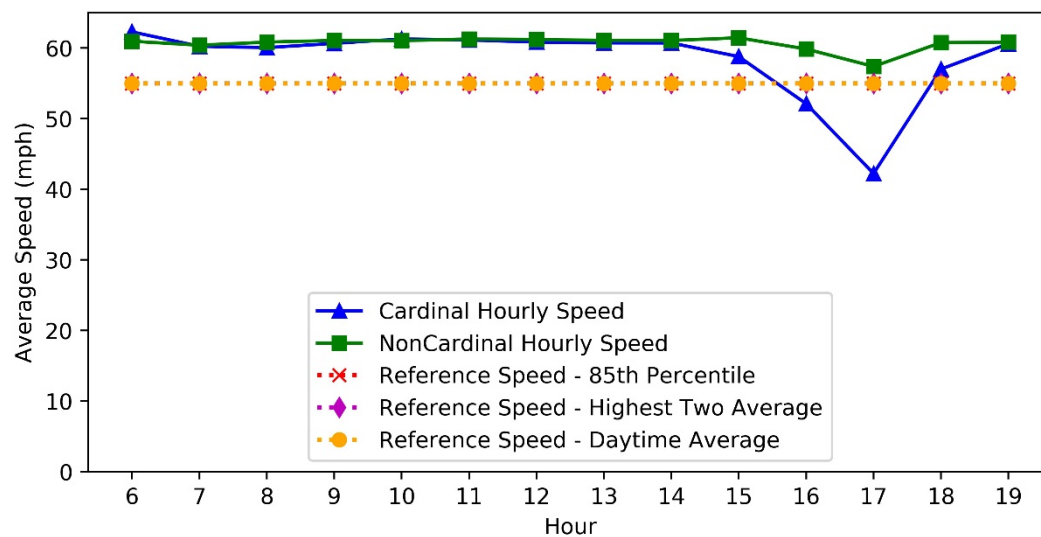
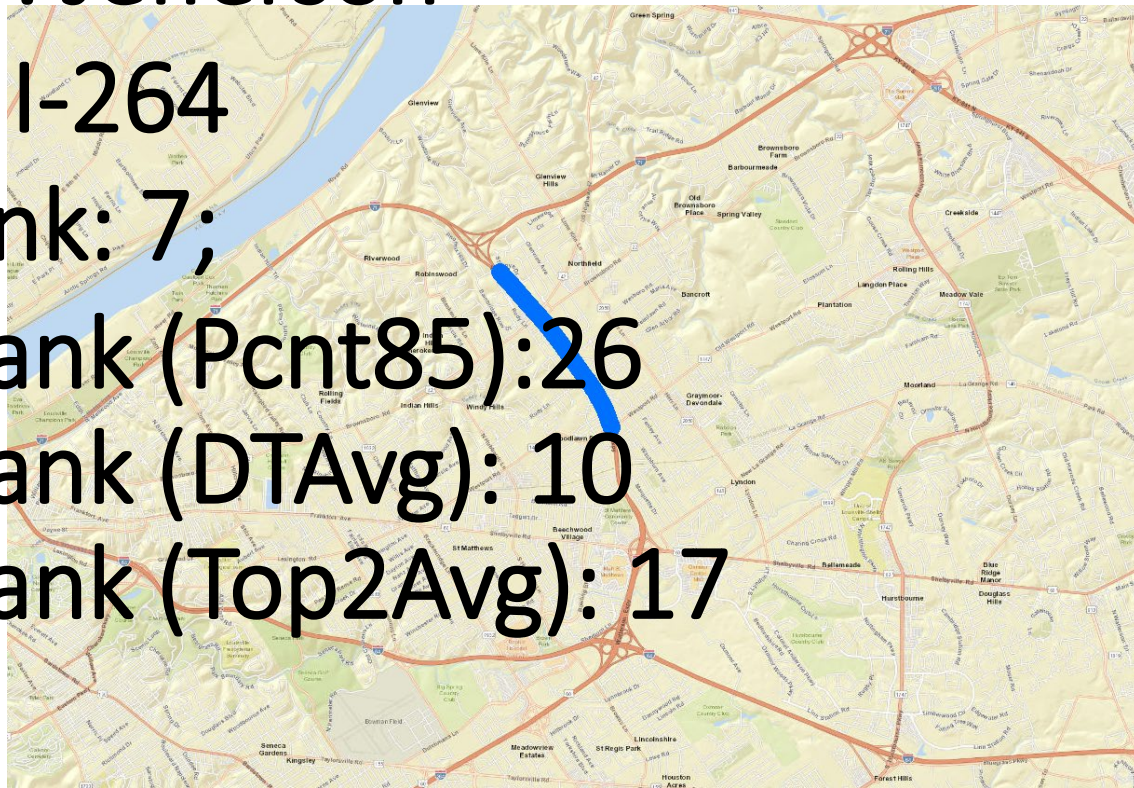
Route: I-264

Old Rank: 7;

New Rank (Pcnt85): 26

New Rank (DTAvg): 10

New Rank (Top2Avg): 17



Project Length	1.7
AADT	59311
Project Type	RECONSTRUCTION(O)
VSF Scale	89.80
DHV Scale	95.92
Congestion Measure	91.0
VHD Scale	67.0

# County: Graves

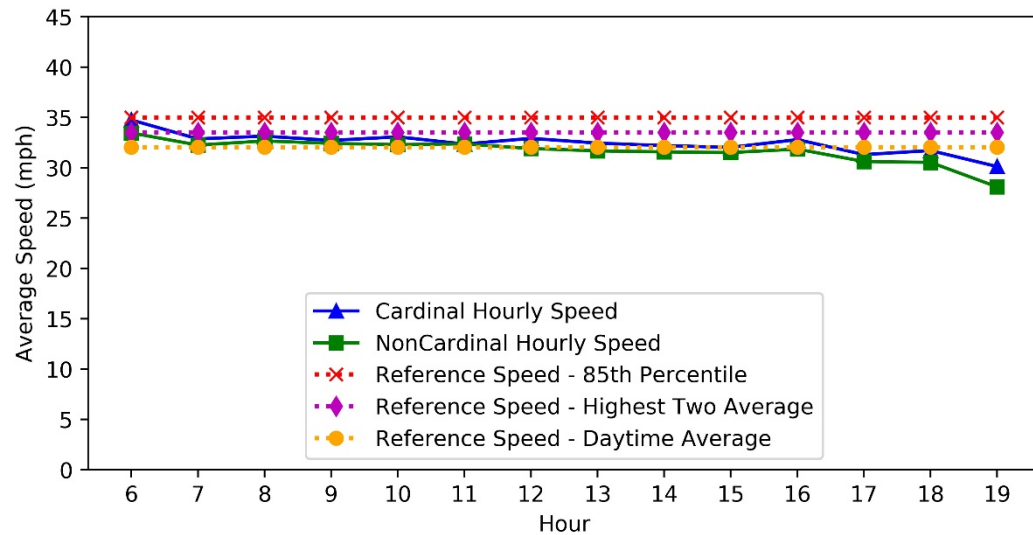
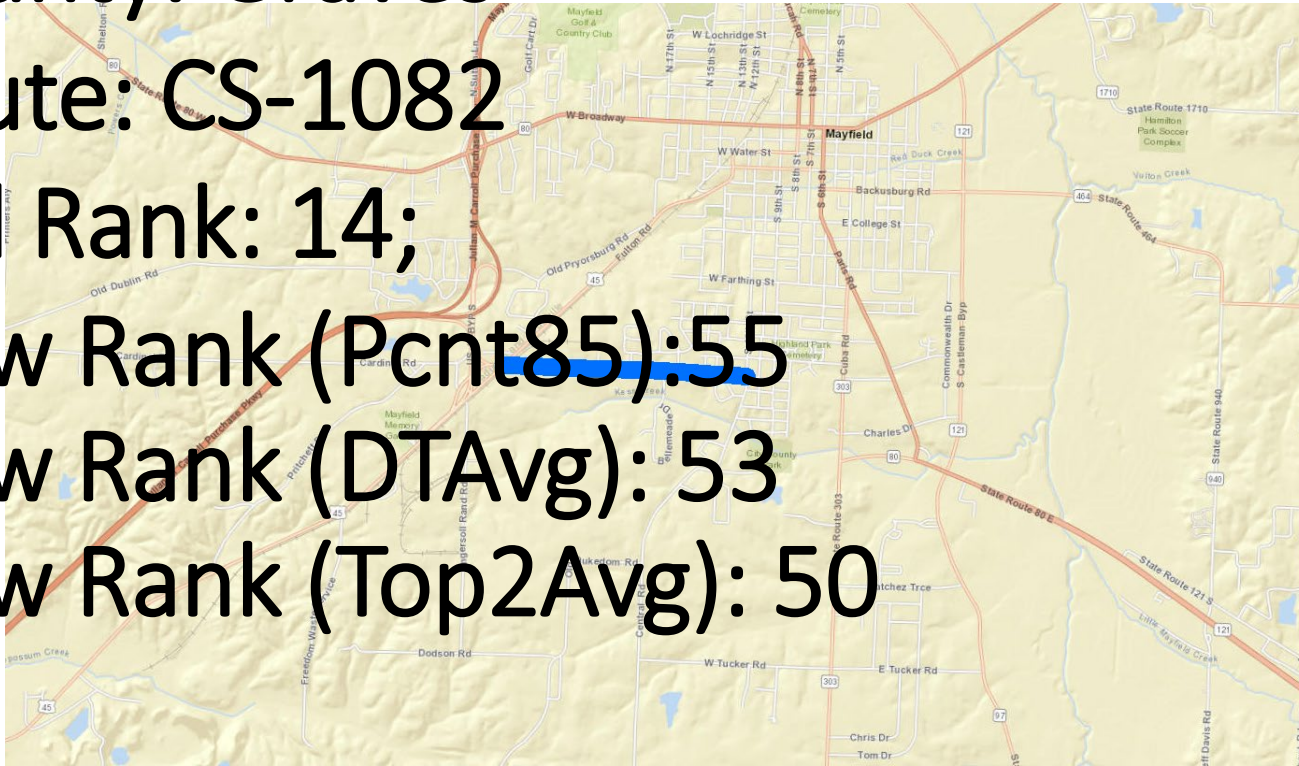
## Route: CS-1082

### Old Rank: 14;

### New Rank (Pcnt85): 55

### New Rank (DTAvg): 53

### New Rank (Top2Avg): 50



<b>Project Length</b>	<b>1.281</b>
AADT	4449
Project Type	NEW ROUTE(O)
VSF Scale	94.90
DHV Scale	38.78
<b>Congestion Measure</b>	<b>83.7</b>
<b>VHD Scale</b>	<b>48.0</b>

# County: Shelby

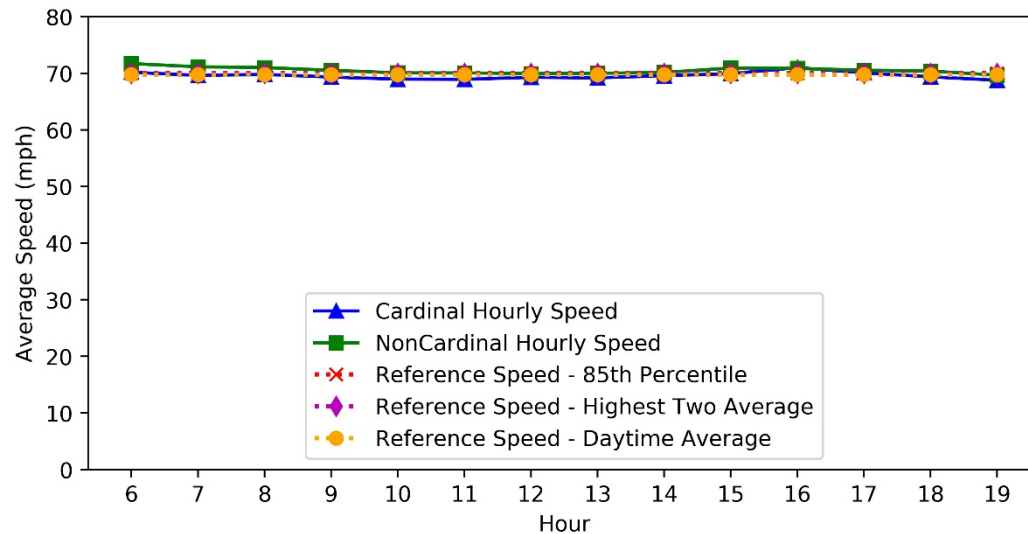
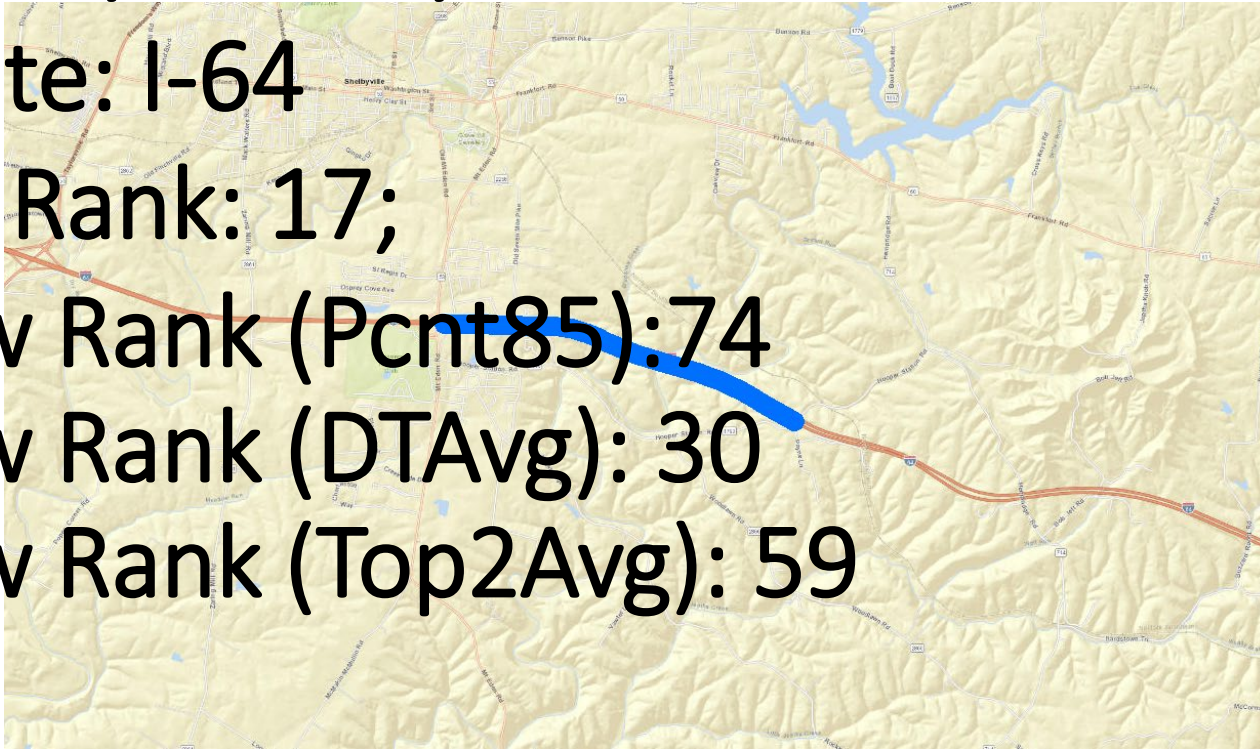
## Route: I-64

### Old Rank: 17;

### New Rank (Pcnt85): 74

### New Rank (DTAvg): 30

### New Rank (Top2Avg): 59



<b>Project Length</b>	<b>2.959</b>
AADT	41274
Project Type	SAFETY(P)
VSF Scale	76.53
DHV Scale	93.88
<b>Congestion Measure</b>	<b>80.0</b>
<b>VHD Scale</b>	<b>28.0</b>



# Top 5 Projects with New Method

Eval County	Eval Route	Length	Project Type	AADT	VSF	VSF-Scale	DHV	DHV-Scale	Congestion Measure	Old_Ranking	VHD_Scale	VHD_Pcnt85_Ranking	VHD_DTAvg_Ranking	VHD_Top2A_vg_Ranking
Jefferson	056-I-0265-000	11.318	MAJOR WIDENING(O)	67796	0.88	96.94	6576	97.96	97.1	3	97.0	3	1	3
Jefferson	056-I-0265-000	1	I-CHANGE RECONSTRUCTION(O)	82157	1.04	100.00	7887	98.98	99.8	1	94.0	5	2	5
Jefferson	056-I-0065-000	2.298	Reconstruction	144923	1.03	98.98	12318	100.00	99.2	2	75.0	6	3	6
Jefferson	056-KY-0061-000	7.005	Reconstruction	27058	0.40	72.45	2192	90.82	76.1	24	100.0	1	4	1
Hardin	047-US-0031W-000	9.582	CONGESTION MITIGATION(O)	25914	0.39	70.41	2255	91.84	74.7	28	99.0	2	5	2

County: Jefferson

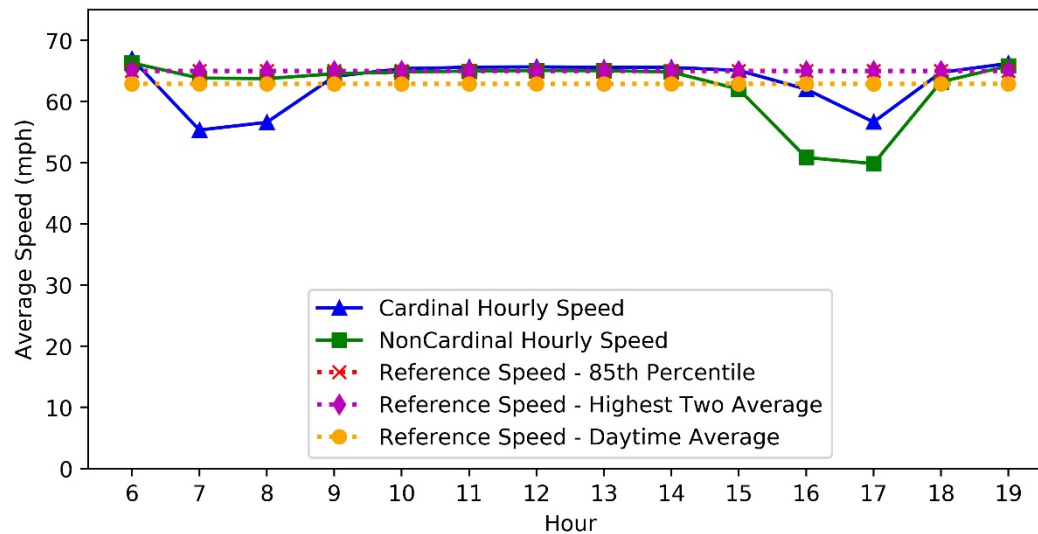
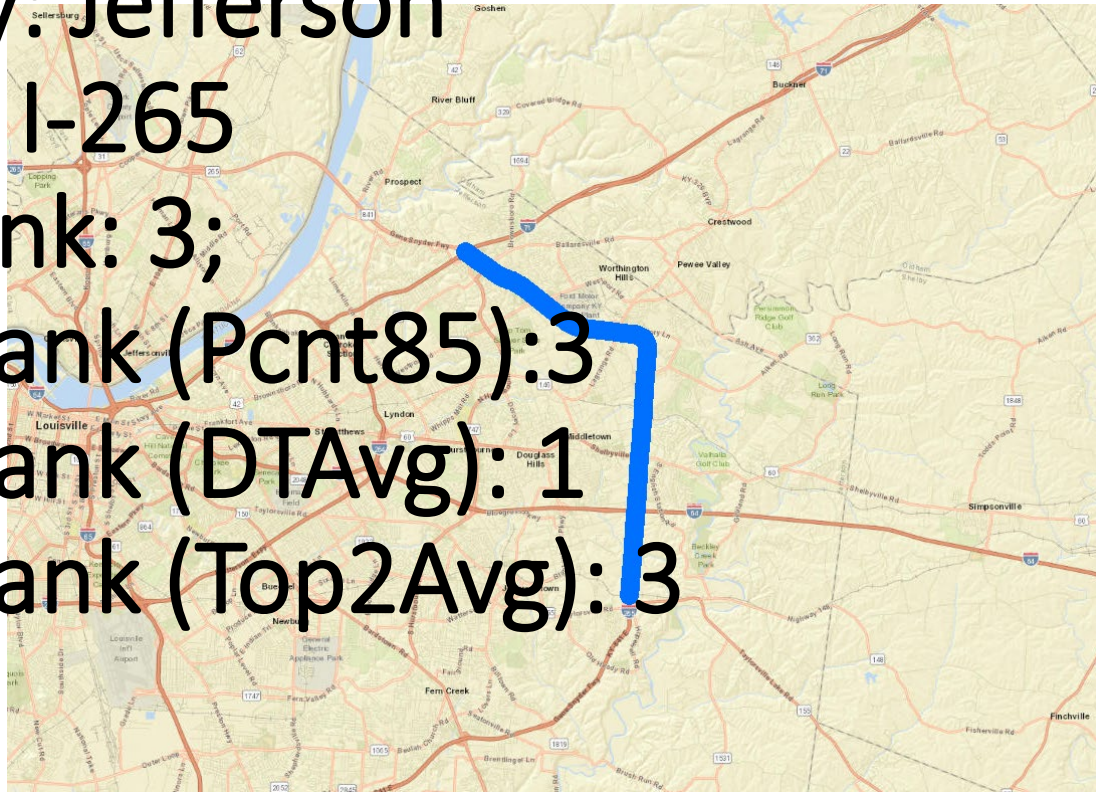
Route: I-265

Old Rank: 3;

New Rank (Pcnt85): 3

New Rank (DTAvg): 1

New Rank (Top2Avg): 3



<b>Project Length</b>	<b>11.318</b>
AADT	67796
Project Type	MAJOR WIDENING(O)
VSF Scale	96.94
DHV Scale	97.96
<b>Congestion Measure</b>	<b>97.1</b>
<b>VHD Scale</b>	<b>97.0</b>

County: Jefferson

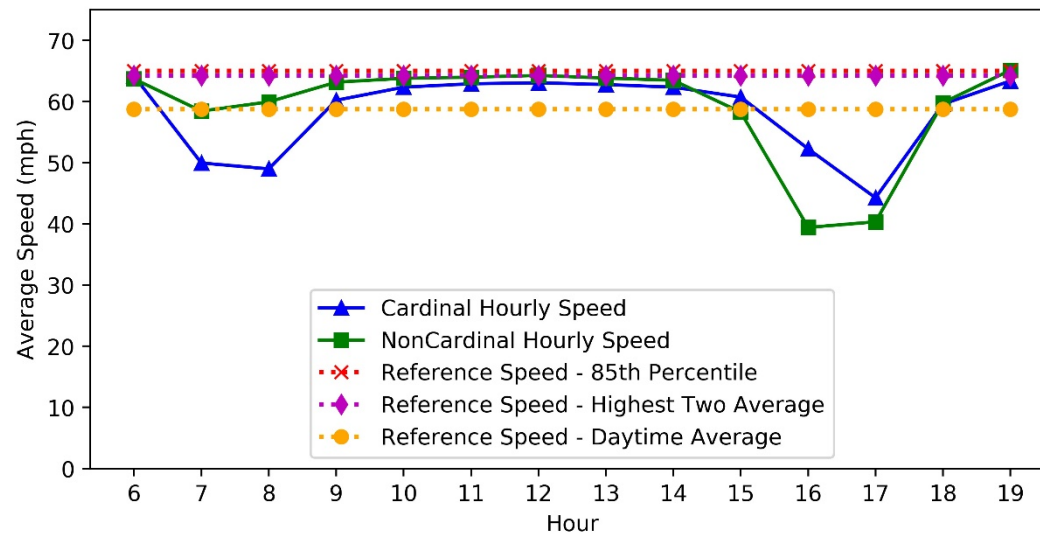
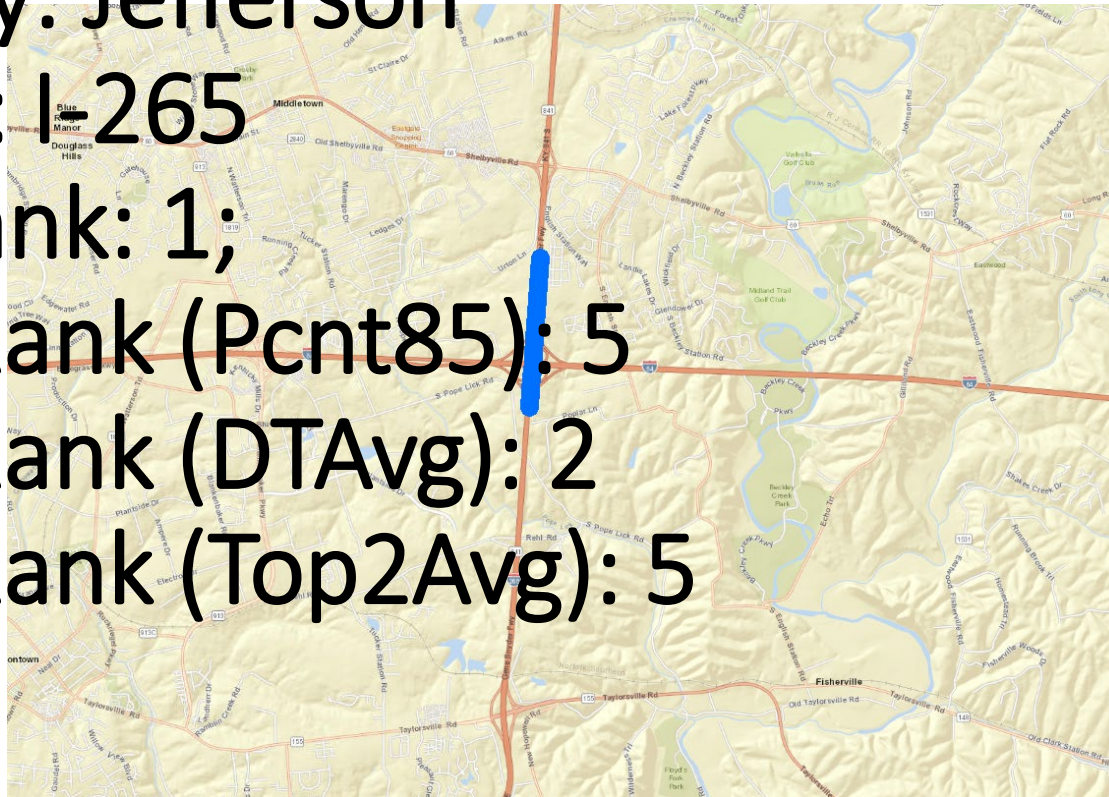
Route: I-265

Old Rank: 1;

New Rank (Pcnt85): 5

New Rank (DTAvg): 2

New Rank (Top2Avg): 5



Project Length	1
AADT	82157
Project Type	I-Change Reconstruction
VSF Scale	100.00
DHV Scale	98.98
Congestion Measure	99.8
VHD Scale	94

County: Jefferson

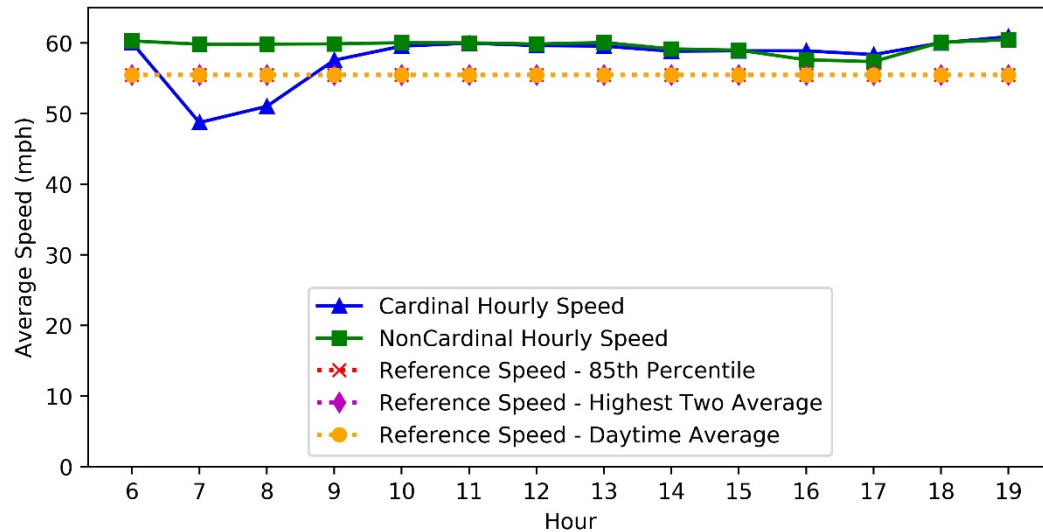
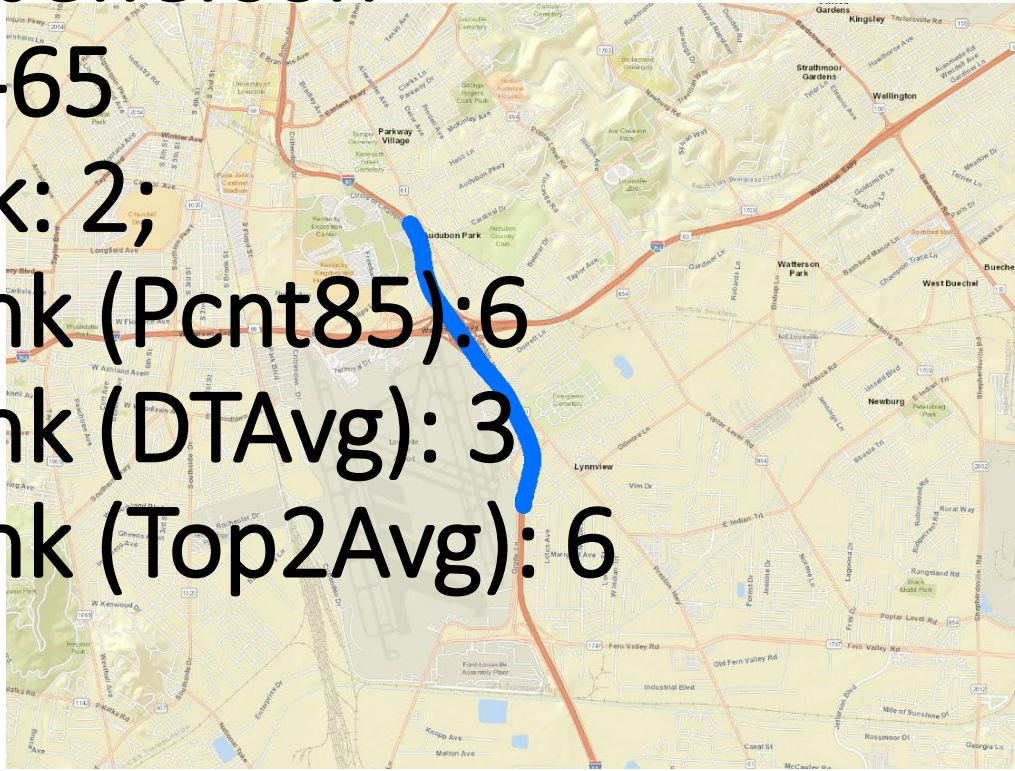
Route: I-65

Old Rank: 2;

New Rank (Pcnt85): 6

New Rank (DTAvg): 3

New Rank (Top2Avg): 6



Project Length	2.298
AADT	144923
Project Type	Reconstruction
VSF Scale	98.98
DHV Scale	100.00
Congestion Measure	99.2
VHD Scale	75.0

County: Jefferson

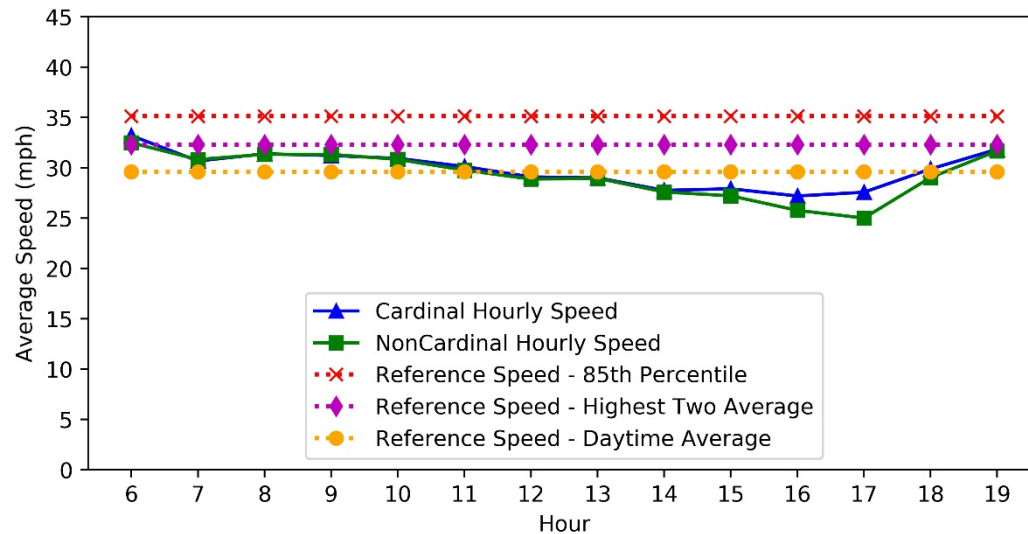
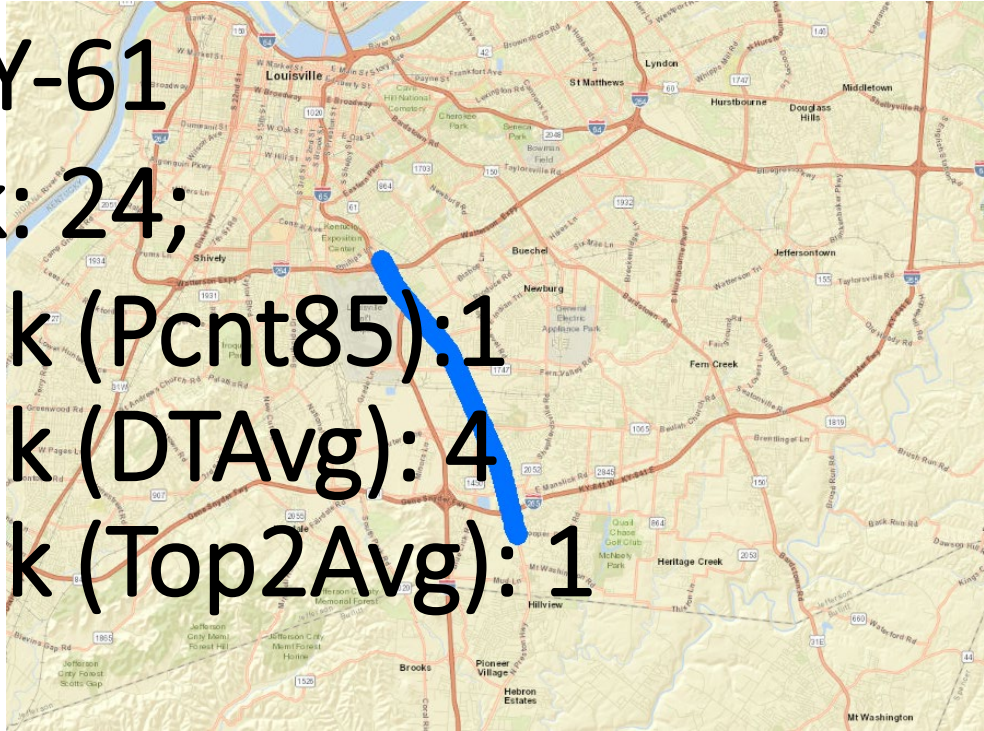
Route: KY-61

Old Rank: 24;

New Rank (Pcnt85): 1

New Rank (DTAvg): 4

New Rank (Top2Avg): 1



Project Length	7.005
AADT	27058
Project Type	Reconstruction
VSF Scale	72.45
DHV Scale	90.82
Congestion Measure	76.1
VHD Scale	100.0

County: Hardin

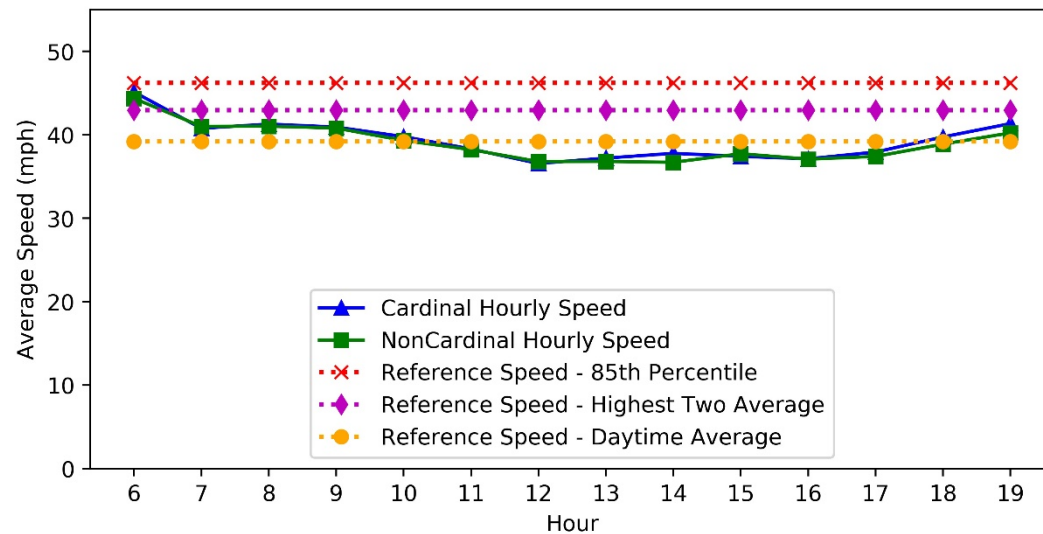
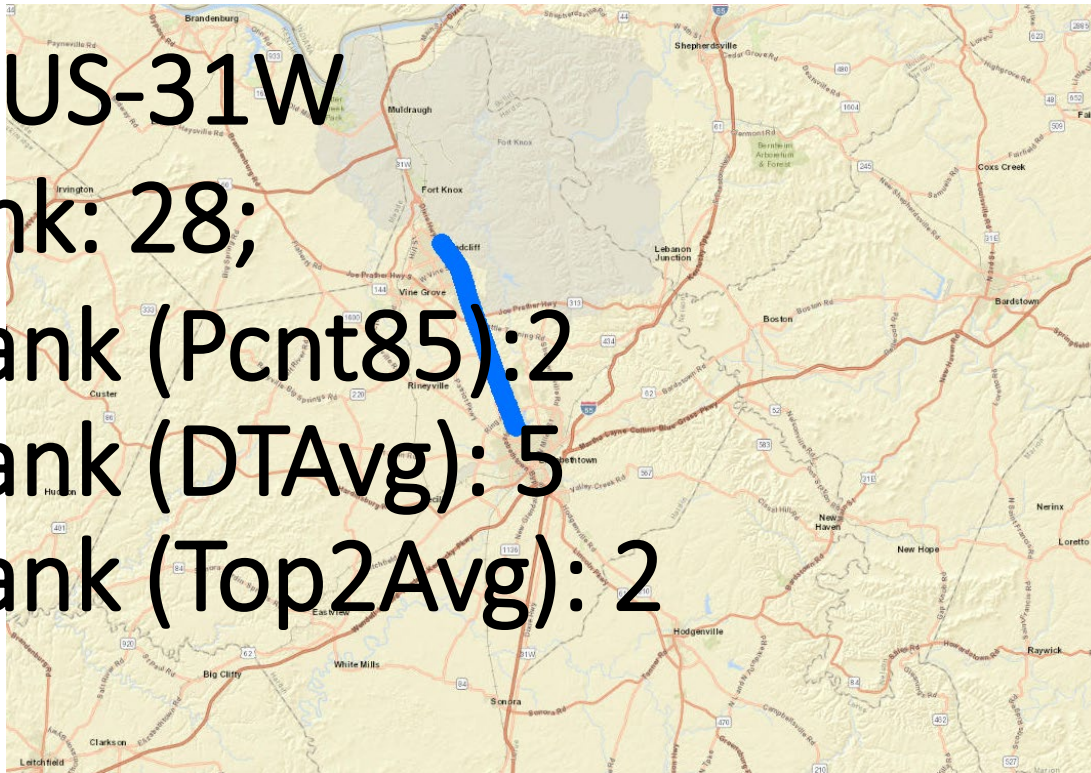
Route: US-31W

Old Rank: 28;

New Rank (Pcnt85): 2

New Rank (DTAvg): 5

New Rank (Top2Avg): 2



Project Length	9.582
AADT	25914
Project Type	CONGESTION MITIGTN(O)
VSF Scale	70.41
DHV Scale	91.84
<b>Congestion Measure</b>	<b>74.7</b>
<b>VHD Scale</b>	<b>99.0</b>

# Selected Projects w/ Large Gain in Ranking

Eval County	Eval Route	Length	Project Type	AADT	VSF	VSF-Scale	DHV	DHV-Scale	Congestion Measure	Old_Ranking	VHD_Scale	VHD_Pcnt85_Ranking	VHD_DTAvg_Ranking	VHD_Top2Avg_Ranking
Hardin	047-KY-0313 -000	3.936	MAJOR WIDENING(O)	13933	0.32	60.20	1338	80.61	64.3	38	93.0	9	19	12
Powell	099-KY-0011 -000	1.709	Reconstruction	7487	0.16	24.49	651	58.16	31.2	70	86.0	19	23	20
Larue	062-KY-0084 -000	9.033	SPOT IMPROVEMENTS(O)	1697	0.10	9.18	158	11.22	9.6	92	78.0	30	45	42

# County: Hardin

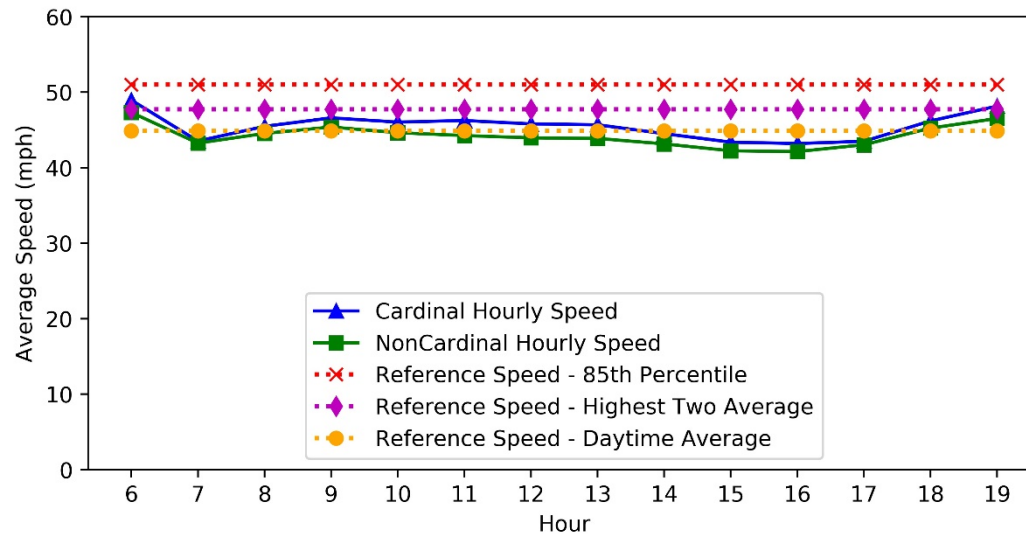
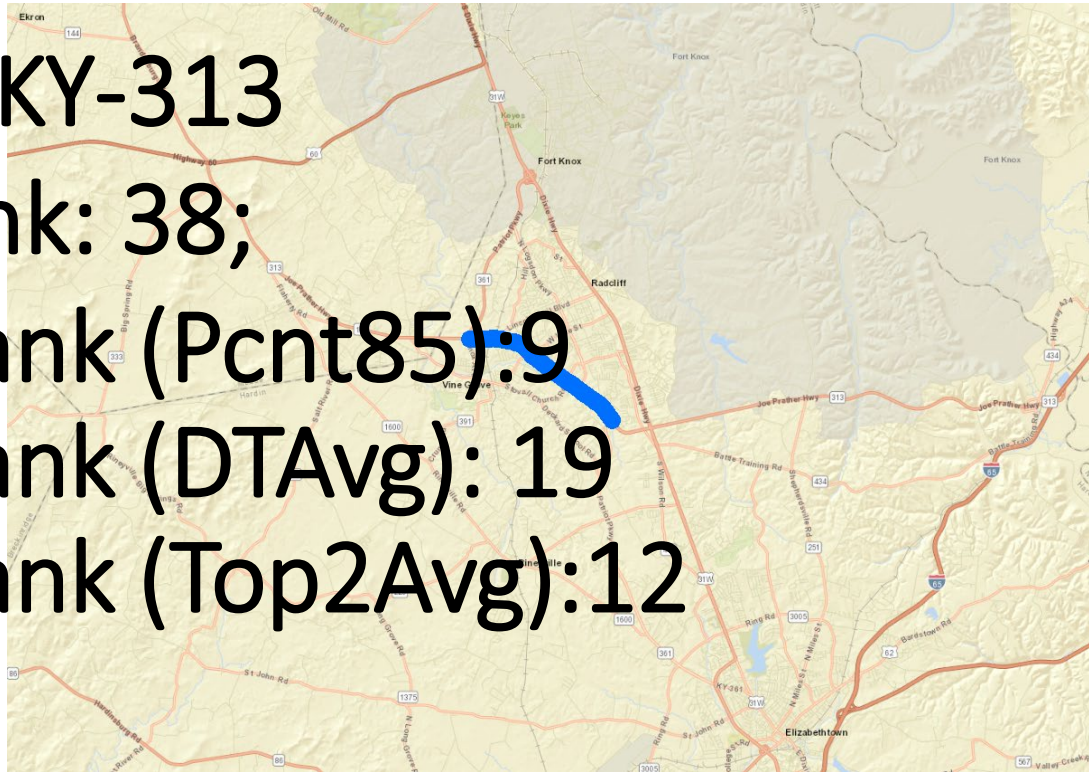
## Route: KY-313

### Old Rank: 38;

### New Rank (Pcnt85): 9

### New Rank (DTAvg): 19

### New Rank (Top2Avg): 12



<b>Project Length</b>	<b>3.936</b>
AADT	13933
Project Type	MAJOR WIDENING(O)
VSF Scale	60.20
DHV Scale	80.61
<b>Congestion Measure</b>	<b>64.3</b>
<b>VHD Scale</b>	<b>93.0</b>



# County: Powell

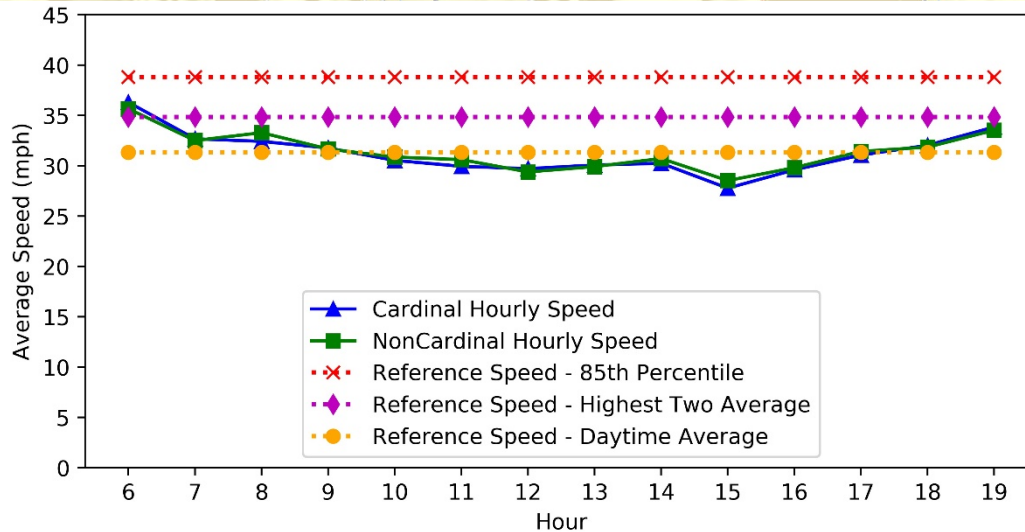
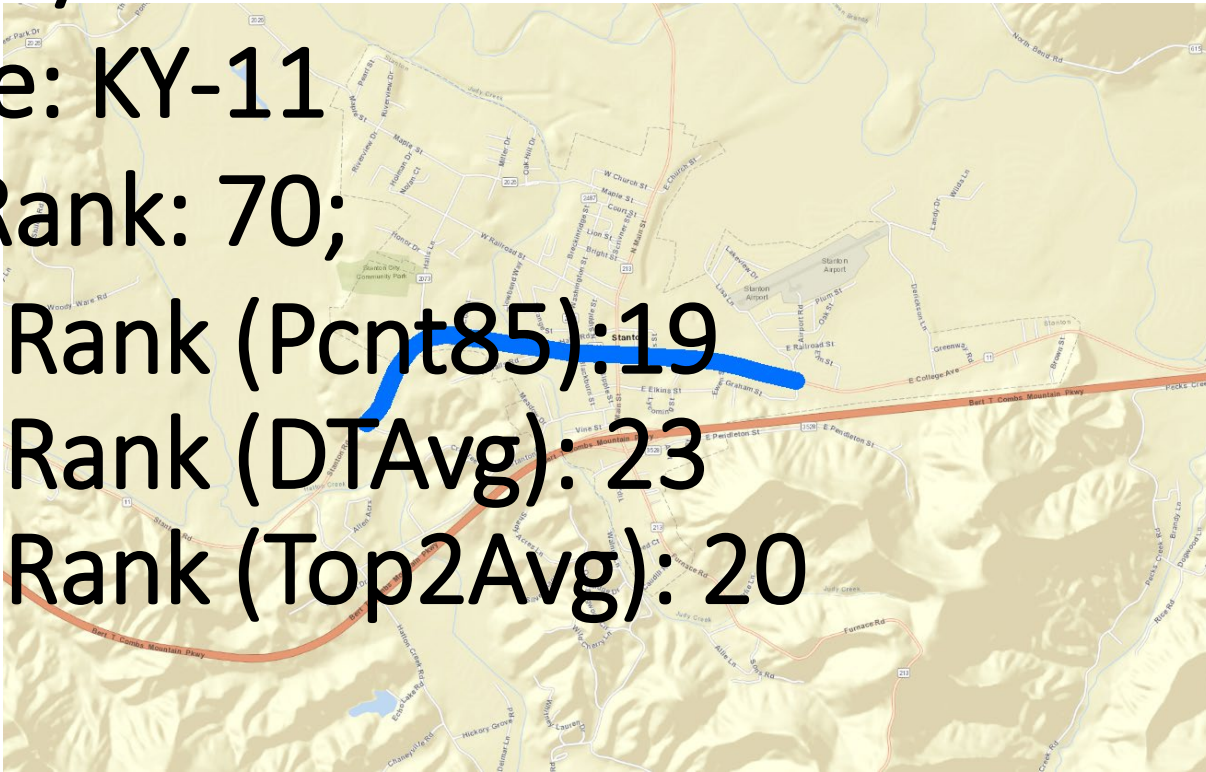
## Route: KY-11

### Old Rank: 70;

### New Rank (Pcnt85): 19

### New Rank (DTAvg): 23

### New Rank (Top2Avg): 20



<b>Project Length</b>	<b>1.709</b>
AADT	7487
Project Type	Reconstruction
VSF Scale	24.49
DHV Scale	58.16
<b>Congestion Measure</b>	<b>31.2</b>
<b>VHD Scale</b>	<b>86.0</b>

# County: Larue

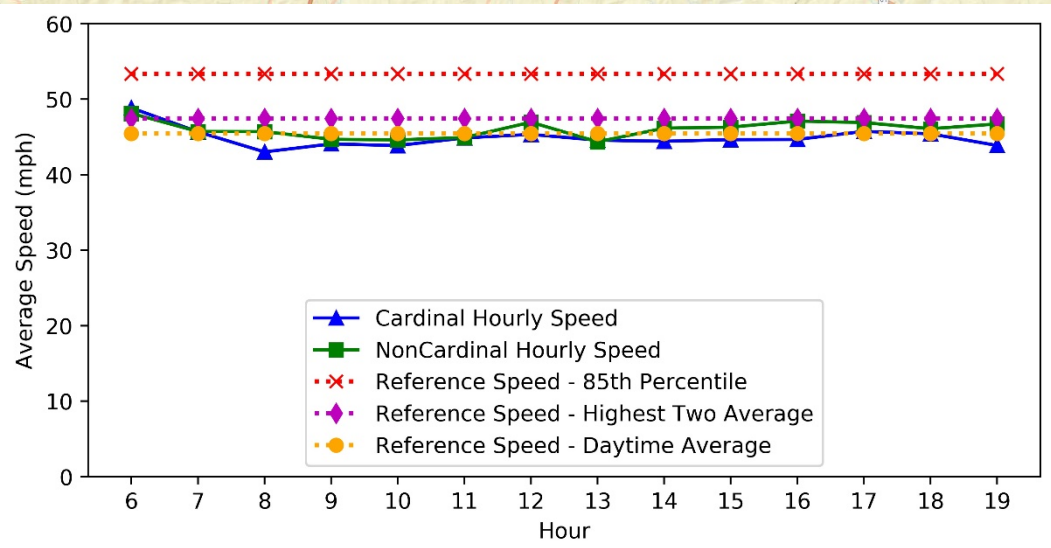
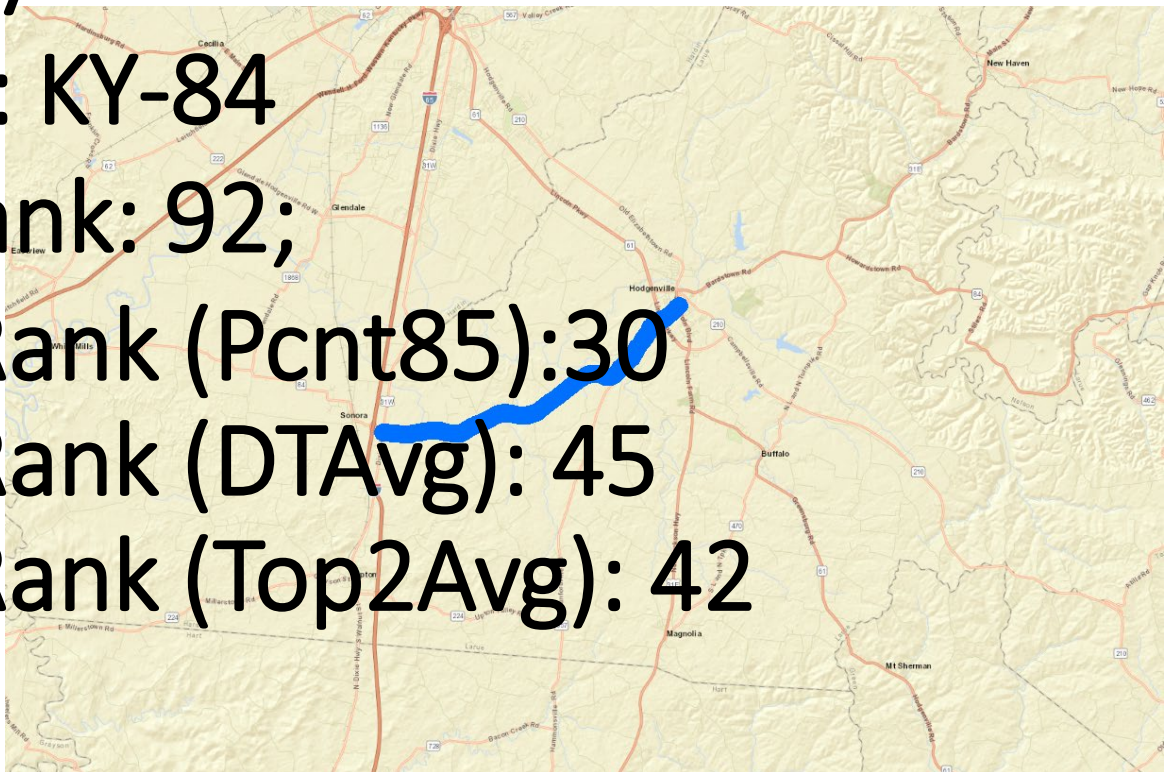
Route: KY-84

Old Rank: 92;

New Rank (Pcnt85): 30

New Rank (DTAvg): 45

New Rank (Top2Avg): 42



<b>Project Length</b>	<b>9.033</b>
AADT	1697
Project Type	SPOT IMPROVEMENTS(O)
VSF Scale	9.18
DHV Scale	11.22
<b>Congestion Measure</b>	<b>9.6</b>
<b>VHD Scale</b>	<b>78.0</b>

