

## **Appendix C: Air Quality Supporting Documentation**

**Suffolk Downs**  
**Mesoscale Analysis**

	<b>2018 Existing</b>	<b>2040 No-Build</b>	<b>2040 Build</b>	<b>2040 Build-Mit</b>
<b>OXIDES OF NITROGEN (NO<sub>x</sub>)</b>				
Emissions (kg/d)	250.2	46.7	63.5	56.3
Project Contribution (kg/d)			16.8	-7.2
<b>VOLATILE ORGANIC COMPOUNDS (VOC)</b>				
Emissions (kg/d)	245.3	122.7	168.7	149.2
Project Contribution (kg/d)			46.0	-19.5
<b>GREENHOUSE GAS (CO<sub>2</sub>)</b>				
Emissions (short tons per year)	175,804	127,963	191,695	162,335
Project Contribution (short tons per year)			63,732	-29,360



Suffolk Downs 2040 Build table with columns: Link No., Description, Roadway, Link Length, Emission Factor, AADI, Seasonally Adjusted ADT, VMT Peak, VMT Off-Peak, Peak Period Factor, Period Volume, Peak Traffic Data (Average Delay, Adjusted Delay), Off-Peak Traffic Data (Average Delay, Adjusted Delay), Link Emissions (NOx, VOC).

Summary row for VMT (per day) and VMT (per year).

Summary row for Arterial traffic and Adjusted Delay (veh-sec).

Summary row for Daily Total (kg) of NOx and VOC.

Summary table with VMT Total (per year) and emissions EF (g/s), Idle (kg/day), and VOC (kg/day).







Suffolk Downs

Table with columns: Link No., Description, Roadway, Link Length, Emission Factor, Seasonally Adjusted AADT, VMT Peak, VMT Off-Peak, Annual Weekday Trips, Period Factor, Peak Traffic Data (Period Volume, Average Delay, Adjusted Delay), Off-Peak Traffic Data (Period Volume, Average Delay, Adjusted Delay), Link Emissions (CO2 grams).

Arterial 68,534,339,571

48,124,380,776

102,926.06

Total (Including Link) 191,694.95

Summary table with 3 columns: VMT per year, Weekday, Total. Values: 350,995,276.54, 350,995,276.54.

Summary table with 4 columns: Peak Period, Off-Peak Period, Total, (g/year), (tons/year), Total Idle, (g/year), (tons/year). Values include 0.6903, 33,220,926,877, 88,768.88, 52,149.70, 36,619.19, 191,694.95.













**Suffolk Downs**

**Weekday ATR Volumes**

Route 1A (North of Tomesello) [5/3/2017]					Route 1A (North of Tomesello) [5/4/2017]					Route 1A (North of Tomesello) [5/9/2017]					Weekday Average								
Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data		Begin Time	Volume	V/C Ratio	Peak Period Data					
			Hours	Volume				Hours	Volume				Hours	Volume				Hours	Volume				
12:00 AM	947	0.23	0	0	12:00 AM	891	0.23	0	0	12:00 AM	750	0.18	0	0	12:00 AM	863	0.21	0	0				
1:00 AM	515	0.13	0	0	1:00 AM	524	0.13	0	0	1:00 AM	537	0.13	0	0	1:00 AM	525	0.13	0	0				
2:00 AM	413	0.10	0	0	2:00 AM	474	0.10	0	0	2:00 AM	385	0.09	0	0	2:00 AM	424	0.10	0	0				
3:00 AM	532	0.13	0	0	3:00 AM	546	0.13	0	0	3:00 AM	500	0.12	0	0	3:00 AM	526	0.13	0	0				
4:00 AM	1,042	0.26	0	0	4:00 AM	1,098	0.26	0	0	4:00 AM	1,028	0.25	0	0	4:00 AM	1,056	0.26	0	0				
5:00 AM	2,206	0.54	0	0	5:00 AM	2,240	0.54	0	0	5:00 AM	2,187	0.54	0	0	5:00 AM	2,211	0.54	0	0				
6:00 AM	2,769	0.68	0	0	6:00 AM	2,892	0.68	0	0	6:00 AM	2,945	0.73	0	0	6:00 AM	2,869	0.71	0	0				
7:00 AM	2,945	0.73	0	0	7:00 AM	3,057	0.73	0	0	7:00 AM	2,954	0.73	0	0	7:00 AM	2,985	0.74	0	0				
8:00 AM	3,033	0.75	0	0	8:00 AM	3,063	0.75	0	0	8:00 AM	3,117	0.77	1	3,117	8:00 AM	3,071	0.76	1	3,071				
9:00 AM	3,170	0.78	1	3,170	9:00 AM	3,185	0.78	1	3,170	9:00 AM	2,989	0.74	1	2,989	9:00 AM	3,115	0.77	1	3,115				
10:00 AM	3,241	0.80	1	3,241	10:00 AM	3,197	0.80	1	3,241	10:00 AM	3,001	0.74	1	3,001	10:00 AM	3,146	0.77	1	3,146				
11:00 AM	3,146	0.77	1	3,146	11:00 AM	3,063	0.77	0	0	11:00 AM	2,941	0.72	0	0	11:00 AM	3,050	0.75	0	0				
12:00 PM	3,115	0.77	0	0	12:00 PM	3,269	0.77	1	3,115	12:00 PM	2,919	0.72	0	0	12:00 PM	3,101	0.76	1	3,101				
1:00 PM	3,167	0.78	1	3,167	1:00 PM	3,290	0.78	1	3,167	1:00 PM	2,987	0.74	1	2,987	1:00 PM	3,148	0.78	1	3,148				
2:00 PM	3,356	0.83	1	3,356	2:00 PM	3,579	0.83	1	3,356	2:00 PM	3,453	0.85	1	3,453	2:00 PM	3,463	0.85	1	3,463				
3:00 PM	3,509	0.86	1	3,509	3:00 PM	3,725	0.86	1	3,509	3:00 PM	3,613	0.89	1	3,613	3:00 PM	3,616	0.89	1	3,616				
4:00 PM	3,400	0.84	1	3,400	4:00 PM	3,585	0.84	1	3,400	4:00 PM	3,515	0.87	1	3,515	4:00 PM	3,500	0.86	1	3,500				
5:00 PM	3,059	0.75	0	0	5:00 PM	3,526	0.75	1	3,059	5:00 PM	3,516	0.87	1	3,516	5:00 PM	3,367	0.83	1	3,367				
6:00 PM	3,342	0.82	1	3,342	6:00 PM	3,382	0.82	1	3,342	6:00 PM	3,298	0.81	1	3,298	6:00 PM	3,341	0.82	1	3,341				
7:00 PM	3,025	0.75	0	0	7:00 PM	3,008	0.75	0	0	7:00 PM	2,806	0.69	0	0	7:00 PM	2,946	0.73	0	0				
8:00 PM	2,516	0.62	0	0	8:00 PM	2,675	0.62	0	0	8:00 PM	2,293	0.56	0	0	8:00 PM	2,495	0.61	0	0				
9:00 PM	2,174	0.54	0	0	9:00 PM	2,301	0.54	0	0	9:00 PM	2,164	0.53	0	0	9:00 PM	2,213	0.55	0	0				
10:00 PM	1,859	0.46	0	0	10:00 PM	2,065	0.46	0	0	10:00 PM	1,909	0.47	0	0	10:00 PM	1,944	0.48	0	0				
11:00 PM	1,493	0.37	0	0	11:00 PM	1,729	0.37	0	0	11:00 PM	1,386	0.34	0	0	11:00 PM	1,536	0.38	0	0				
<b>Total</b>	<b>57,974</b>		<b>8</b>	<b>26,331</b>	<b>Total</b>	<b>60,364</b>		<b>9</b>	<b>29,359</b>	<b>Total</b>	<b>57,193</b>		<b>9</b>	<b>29,489</b>	<b>Total</b>	<b>58,510</b>		<b>10</b>	<b>32,867</b>				
Roadway Capacity	4,060	Crit. V/C	77%	Critical Capacity	3,126	Roadway Capacity	4,060	Crit. V/C	76%	Critical Capacity	3,086	Roadway Capacity	4,060	Crit. V/C	73%	Critical Capacity	2,964	Roadway Capacity	4,060	Crit. V/C	75%	Critical Capacity	3,059
Peak Hour (K) Factor	0.061					Peak Hour (K) Factor	0.062					Peak Hour (K) Factor	0.063					Peak Hour (K) Factor	0.062				
Peak Period Volume Factor			0.454			Peak Period Volume Factor			0.486			Peak Period Volume Factor			0.516			Peak Period Volume Factor			0.562		

**Suffolk Downs**

**Emissions Factors By Link (g/mi)**

**Emission Factors From MOVES2014a**

Roadway Segments	2018 Existing			2040 No Build			2040 Build			2040 Build-Mit		
	NO <sub>x</sub>	VOC	CO <sub>2</sub>	NO <sub>x</sub>	VOC	CO <sub>2</sub>	NO <sub>x</sub>	VOC	CO <sub>2</sub>	NO <sub>x</sub>	VOC	CO <sub>2</sub>
1 Prescott St (Bennington/Chelsea)	0.26	3.81	477.04	0.04	1.73	295.23	0.04	1.73	295.23	0.04	1.73	295.23
2 Chelsea St (Visconti/Prescott)	0.26	0.24	477.04	0.04	0.11	295.23	0.04	0.11	295.23	0.04	0.11	295.23
3 Prescott St (Chelsea/Bremen)	0.28	1.95	496.06	0.04	0.88	307.24	0.04	0.88	307.24	0.04	0.88	307.24
4 Chelsea St (Prescott/Bennington)	0.29	1.33	502.06	0.05	0.60	311.05	0.05	0.60	311.05	0.05	0.60	311.05
5 Chelsea St (Bennington/MobilGas)	0.32	1.33	530.03	0.05	0.60	328.91	0.05	0.60	328.91	0.05	0.60	328.91
6 Chelsea St (MobilGas/Saratoga)	0.28	1.33	490.08	0.04	0.60	303.46	0.04	0.60	303.46	0.04	0.60	303.46
7 Unamed St (Chelsea/Bennington)	0.32	2.58	530.03	0.05	1.16	328.91	0.05	1.16	328.91	0.05	1.16	328.91
8 Unamed St (Bennington/Bremen)	0.30	3.82	515.87	0.05	1.73	319.86	0.05	1.73	319.86	0.05	1.73	319.86
9 Bennington St (Chelsea/Unamed)	0.28	1.15	498.88	0.05	0.52	309.01	0.05	0.52	309.01	0.05	0.52	309.01
10 Bennington St (Unamed/Neptune)	0.27	0.76	484.11	0.04	0.34	299.71	0.04	0.34	299.71	0.04	0.34	299.71
11 Neptune Rd (Chelsea/Saratoga)	0.35	3.82	557.20	0.06	1.73	346.28	0.06	1.73	346.28	0.06	1.73	346.28
12 Saratoga St (Chelsea/Neptune)	0.26	1.95	477.04	0.04	0.88	295.23	0.04	0.88	295.23	0.04	0.88	295.23
13 Saratoga St (Neptune/Bremen)	0.31	1.58	524.40	0.05	0.71	325.28	0.05	0.71	325.28	0.05	0.71	325.28
14 Neptune Rd (Saratoga/Bremen)	0.35	3.82	557.20	0.06	1.73	346.28	0.06	1.73	346.28	0.06	1.73	346.28
15 Bremen St (Bennington/Neptune)	0.26	2.57	477.04	0.04	1.16	295.23	0.04	1.16	295.23	0.04	1.16	295.23
16 Bremen St (Neptune/Saratoga)	0.29	1.58	507.36	0.05	0.71	314.41	0.05	0.71	314.41	0.05	0.71	314.41
17 Neptune Rd (Bremen/Bennington)	0.26	3.81	477.04	0.04	1.73	295.23	0.04	1.73	295.23	0.04	1.73	295.23
18 Neptune Rd (Bennington/Rt1AOnRamp)	0.26	3.81	477.04	0.04	1.73	295.23	0.04	1.73	295.23	0.04	1.73	295.23
19 Route 1A Onramp (Neptune)	0.33	0.83	510.38	0.06	0.37	317.82	0.06	0.37	317.82	0.06	0.37	317.82
20 Neptune Rd (Rt1A Onramp/Offramp)	0.26	3.81	477.04	0.04	1.73	295.23	0.04	1.73	295.23	0.04	1.73	295.23
21 Route 1A Offramp (Neptune)	0.18	0.81	362.45	0.03	0.36	224.15	0.03	0.36	224.15	0.03	0.36	224.15
22 Vienna St (Neptune/Bennington)	0.28	1.15	498.88	0.05	0.52	309.01	0.05	0.52	309.01	0.05	0.52	309.01
23 Neptune Rd (Vienna/Frankfort)	0.43	2.59	639.58	0.08	1.17	398.49	0.08	1.17	398.49	0.08	1.17	398.49
24 Bennington St (Neptune/Swift)	0.28	0.49	463.01	0.05	0.22	287.84	0.05	0.22	287.84	0.05	0.22	287.84
25 Swift St (Saratoga/Bennington)	0.33	1.96	537.13	0.06	0.88	333.45	0.06	0.88	333.45	0.06	0.88	333.45
26 Swift St (Bennington/End)	0.45	1.35	656.61	0.09	0.61	409.24	0.09	0.61	409.24	0.09	0.61	409.24
27 Bennington St (Swift/Boardman)	0.25	0.16	432.31	0.04	0.07	268.40	0.04	0.07	268.40	0.04	0.07	268.40
28 Route 1A SB (Curtis/ Neptune)	0.30	0.32	437.29	0.06	0.14	271.51	0.06	0.14	271.51	0.06	0.14	271.51
29 Curtis St (Chelsea/Route1A)	0.38	1.16	592.55	0.07	0.52	368.70	0.07	0.52	368.70	0.07	0.52	368.70
30 Route 1A SB (U-Turn/Curtis)	0.26	0.41	404.24	0.05	0.18	250.76	0.05	0.18	250.76	0.05	0.18	250.76
31 Route 1A NB (U-Turn/Boardman)	0.26	0.21	403.06	0.05	0.09	250.01	0.05	0.09	250.01	0.05	0.09	250.01
32 Boardman St (End/Route 1A)	0.28	0.76	497.58	0.05	0.34	308.19	0.05	0.34	308.19	0.05	0.34	308.19
33 Boardman St (Route 1A/Bennington)	0.28	0.24	491.40	0.04	0.10	304.29	0.04	0.10	304.29	0.04	0.10	304.29
34 Boardman St (Bennington/Barnes)	0.30	0.91	511.45	0.05	0.41	316.98	0.05	0.41	316.98	0.05	0.41	316.98
35 Bennington St (Boardman/Crescent)	0.27	0.15	480.56	0.04	0.06	297.45	0.04	0.06	297.45	0.04	0.06	297.45
36 Route 1A (Boardman/Waldemar)	0.33	0.53	460.51	0.07	0.24	286.27	0.07	0.24	286.27	0.07	0.24	286.27
37 Waldemar Ave (Route 1A/Wally)	0.27	0.18	488.14	0.04	0.08	302.22	0.04	0.08	302.22	0.04	0.08	302.22
38 Route 1A (Waldemar/Tomesello)	0.44	0.92	558.23	0.10	0.41	348.23	0.10	0.41	348.23	0.10	0.41	348.23
39 Route 1A (Tomesello/Jughandle)	0.47	1.03	584.55	0.11	0.46	364.86	0.11	0.46	364.86	0.11	0.46	364.86
40 Jughandle (Route 1A)	0.26	0.83	477.04	0.04	0.37	295.23	0.04	0.37	295.23	0.04	0.37	295.23
41 Route 1A (Jughandle/Furlong)	0.23	0.21	374.74	0.04	0.09	232.17	0.04	0.09	232.17	0.04	0.09	232.17
42 Furlong Dr (Route 1A/Tomesello)	0.26	0.24	478.47	0.04	0.10	296.12	0.04	0.10	296.12	0.04	0.10	296.12
43 Route 1A (Furlong/BellCir)	0.28	0.22	465.32	0.05	0.09	289.33	0.05	0.09	289.33	0.05	0.09	289.33
44 Tomesello Dr (Route 1A/ Furlong Dr)	0.26	0.17	477.04	0.04	0.07	295.23	0.04	0.07	295.23	0.04	0.07	295.23
45 Tomesello Dr (Furlong/Route145)	0.26	0.39	477.04	0.04	0.17	295.23	0.04	0.17	295.23	0.04	0.17	295.23
46 Winthrop Ave (Beach/Route 16)	0.27	0.32	484.38	0.04	0.14	299.88	0.04	0.14	299.88	0.04	0.14	299.88
47 Harris St (Route16/Beach)	0.28	0.36	496.25	0.04	0.16	307.37	0.04	0.16	307.37	0.04	0.16	307.37
48 Route 16 (Garfield Ave/Winthrop)	0.24	0.12	404.56	0.04	0.05	250.59	0.04	0.05	250.59	0.04	0.05	250.59
49 Route 16 (Washington/Garfield)	0.30	0.31	462.73	0.05	0.13	287.25	0.05	0.13	287.25	0.05	0.13	287.25
50 Garfield Ave (Washington/Route16)	0.27	0.29	488.18	0.04	0.13	302.25	0.04	0.13	302.25	0.04	0.13	302.25
51 Webster Ave (Rt16/Jefferson)	0.27	1.01	456.22	0.05	0.45	283.56	0.05	0.45	283.56	0.05	0.45	283.56
52 Route 16 (Winthrop/Bell Cir)	0.25	0.30	421.10	0.05	0.13	260.95	0.05	0.13	260.95	0.05	0.13	260.95
53 Winthrop Ave (Rt16/Rt1AOnramp)	0.29	0.69	457.38	0.05	0.31	283.84	0.05	0.31	283.84	0.05	0.31	283.84
54 Route 1A Onramp (Rt1A/Winthrop)	0.19	0.60	366.00	0.03	0.27	226.40	0.03	0.27	226.40	0.03	0.27	226.40
55 Winthrop Ave (Rt1AOnramp/NShoreRd)	0.26	0.25	414.85	0.05	0.11	257.26	0.05	0.11	257.26	0.05	0.11	257.26
56 N Shore Rd (Winthrop Ave/Beach St)	0.26	0.20	442.51	0.04	0.09	274.89	0.04	0.09	274.89	0.04	0.09	274.89
57 Winthrop Ave (N Shore/Tomesello)	0.23	1.55	386.20	0.04	0.70	239.23	0.04	0.70	239.23	0.04	0.70	239.23
58 Shaws Drwy (Withrop/Tomesello)	0.32	1.18	625.58	0.05	0.53	386.97	0.05	0.53	386.97	0.05	0.53	386.97
59 Withrop Ave (Tomesello/RBP)	0.23	0.52	386.20	0.04	0.23	239.23	0.04	0.23	239.23	0.04	0.23	239.23
60 Shaws Drwy (RBP)	0.32	1.61	625.58	0.05	0.73	386.97	0.05	0.73	386.97	0.05	0.73	386.97
61 Revere Beach Pkwy (Withrop/State)	0.24	0.31	391.22	0.04	0.14	242.41	0.04	0.14	242.41	0.04	0.14	242.41
62 Winthrop Ave (RBP/Beachmont Lot)	0.28	0.66	489.31	0.04	0.29	302.96	0.04	0.29	302.96	0.04	0.29	302.96
63 Beachmont Lot (Winthrop Ave)	0.32	1.18	625.58	0.05	0.53	386.97	0.05	0.53	386.97	0.05	0.53	386.97
64 Winthrop Ave (Beachmont Lot/State Rd)	0.40	0.93	611.34	0.07	0.41	380.64	0.07	0.41	380.64	0.07	0.41	380.64
65 State Rd (Winthrop/Ocean)	0.27	0.36	435.97	0.05	0.16	270.33	0.05	0.16	270.33	0.05	0.16	270.33
66 State Rd (Ocean/Winthrop Pkwy)	0.23	0.89	401.36	0.04	0.40	248.56	0.04	0.40	248.56	0.04	0.40	248.56
67 Withrop Pkwy (State/Leverett)	0.25	0.26	436.79	0.04	0.11	271.26	0.04	0.11	271.26	0.04	0.11	271.26
68 Revere Beach Blvd (State/Beach)	0.25	0.24	428.89	0.04	0.11	266.23	0.04	0.11	266.23	0.04	0.11	266.23
69 Winthrop Ave (Bennington/Crescent)	0.39	0.51	594.04	0.07	0.23	369.63	0.07	0.23	369.63	0.07	0.23	369.63
70 Bennington St (Crescent/Withrop)	0.42	1.35	625.37	0.08	0.60	389.53	0.08	0.60	389.53	0.08	0.60	389.53
71 Crescent Ave (Bennington/Winthrop)	0.35	0.53	561.64	0.06	0.24	349.17	0.06	0.24	349.17	0.06	0.24	349.17
72 Ocean Ave (RBP/Beach)	0.25	0.22	433.27	0.04	0.10	269.01	0.04	0.10	269.01	0.04	0.10	269.01

73	Beach St (Ocean/RBP)	0.26	2.57	477.04	0.04	1.16	295.23	0.04	1.16	295.23	0.04	1.16	295.23
74	Ocean Ave (Beach/Revere)	0.25	0.17	435.28	0.04	0.07	270.31	0.04	0.07	270.31	0.04	0.07	270.31
75	Beach St (N Shore/Ocean)	0.31	0.92	521.06	0.05	0.41	323.13	0.05	0.41	323.13	0.05	0.41	323.13
76	N Shore Rd (Beach/Butler Cir)	0.28	0.39	467.47	0.05	0.17	290.66	0.05	0.17	290.66	0.05	0.17	290.66
77	Beach St (VFW/N Shore)	0.30	0.32	513.65	0.05	0.14	318.41	0.05	0.14	318.41	0.05	0.14	318.41
78	VFW Pkwy (Bell Cir/Beach St)	0.24	0.69	407.65	0.04	0.31	252.51	0.04	0.31	252.51	0.04	0.31	252.51
79	VFW Pkwy (Beach/Butler Cir)	0.31	0.31	471.57	0.06	0.13	292.93	0.06	0.13	292.93	0.06	0.13	292.93
80	N Shore Rd (Butler Cir/Wonderld Lot)	0.25	0.90	427.77	0.04	0.40	265.53	0.04	0.40	265.53	0.04	0.40	265.53
81	Wonderland MBTA Lot (N Shore Rd)	0.32	0.79	625.58	0.05	0.36	386.97	0.05	0.36	386.97	0.05	0.36	386.97
82	Wonderland MBTA Garage (N Shore Rd)	0.32	0.79	625.58	0.05	0.36	386.97	0.05	0.36	386.97	0.05	0.36	386.97
83	N Shore Rd (MBTA/Revere St)	0.25	0.28	419.10	0.04	0.12	259.71	0.04	0.12	259.71	0.04	0.12	259.71
84	Revere St (N Shore/Ocean)	0.28	0.52	499.26	0.05	0.23	309.25	0.05	0.23	309.25	0.05	0.23	309.25
85	Revere St (Ocean/RBP)	0.35	1.96	557.20	0.06	0.88	346.28	0.06	0.88	346.28	0.06	0.88	346.28
86	N Shore Rd (Revere/Lynnway)	0.24	0.10	405.34	0.04	0.04	251.09	0.04	0.04	251.09	0.04	0.04	251.09
87	Revere St (Rt60/N Shore)	0.27	0.19	480.48	0.04	0.08	297.39	0.04	0.08	297.39	0.04	0.08	297.39
88	Route 60 (Bell Cir/Revere)	0.26	0.21	413.15	0.05	0.09	256.18	0.05	0.09	256.18	0.05	0.09	256.18
89	Revere St (Rt107/Rt60)	0.29	0.40	505.58	0.05	0.17	313.28	0.05	0.17	313.28	0.05	0.17	313.28
90	Route 60 (Revere/Brown Cir)	0.24	0.27	411.52	0.04	0.12	254.95	0.04	0.12	254.95	0.04	0.12	254.95
91	Route 60 (Brown Cir/Charger St)	0.25	0.25	414.22	0.04	0.11	256.64	0.04	0.11	256.64	0.04	0.11	256.64
92	Charger St (Malden/Rt60)	0.30	0.27	513.95	0.05	0.12	318.62	0.05	0.12	318.62	0.05	0.12	318.62
93	Charger St (Rt 60/Ward)	0.29	0.66	506.36	0.05	0.29	313.77	0.05	0.29	313.77	0.05	0.29	313.77
94	Route 60 (Sigourney/Charger)	0.30	0.51	466.91	0.06	0.23	289.94	0.06	0.23	289.94	0.06	0.23	289.94
95	Sigourney St (Malden/Rt60)	0.27	0.32	480.06	0.04	0.14	297.09	0.04	0.14	297.09	0.04	0.14	297.09
96	Sigourney St (Rt60/Retail)	0.42	0.88	733.49	0.07	0.39	455.33	0.07	0.39	455.33	0.07	0.39	455.33
97	Route 60 ( Rt1/Sigourney)	0.29	0.41	454.63	0.05	0.18	282.12	0.05	0.18	282.12	0.05	0.18	282.12
98	Lynnway (RBP/N Shore SB Ramp)	0.27	0.38	483.12	0.04	0.17	299.06	0.04	0.17	299.06	0.04	0.17	299.06
99	N Shore SB Ramp (Lynnway/N Shore)	0.29	0.50	502.06	0.05	0.22	311.05	0.05	0.22	311.05	0.05	0.22	311.05
100	Lynnway (SB Ramp/NB Ramps)	0.26	0.76	477.04	0.04	0.34	295.23	0.04	0.34	295.23	0.04	0.34	295.23
101	N Shore NB Offramp (N Shore/Lynnway)	0.11	2.55	300.96	0.02	1.16	184.59	0.02	1.16	184.59	0.02	1.16	184.59
102	N Shore NB Onramp (N Shore/Lynnway)	0.31	1.15	521.68	0.05	0.52	323.58	0.05	0.52	323.58	0.05	0.52	323.58
103	Rice Ave (Lynnway)	0.24	1.32	453.43	0.04	0.60	280.39	0.04	0.60	280.39	0.04	0.60	280.39
104	Lancaster Ave (Lynnway)	0.27	0.45	481.46	0.04	0.20	298.01	0.04	0.20	298.01	0.04	0.20	298.01
105	Beach St (Central/Bell Cir)	0.28	0.30	490.65	0.04	0.13	303.81	0.04	0.13	303.81	0.04	0.13	303.81
106	Route 60 (Ctr of Bell Cir)	0.25	1.30	400.24	0.05	0.59	248.05	0.05	0.59	248.05	0.05	0.59	248.05
107	Bell Cir (Rt1A/VFW)	0.26	1.57	477.04	0.04	0.71	295.23	0.04	0.71	295.23	0.04	0.71	295.23
108	Bell Cir (VFW/Rt60)	0.26	1.57	477.04	0.04	0.71	295.23	0.04	0.71	295.23	0.04	0.71	295.23
109	Bell Cir (Rt 60/Beach)	0.26	1.57	477.04	0.04	0.71	295.23	0.04	0.71	295.23	0.04	0.71	295.23
110	Bell Cir (Beach/Rt1A)	0.26	1.57	477.04	0.04	0.71	295.23	0.04	0.71	295.23	0.04	0.71	295.23
111	Broadway (Revere/Brown Cir)	0.27	0.30	457.51	0.05	0.13	284.37	0.05	0.13	284.37	0.05	0.13	284.37
112	Salem Tnpk (Brown Cir/Ballard)	0.23	0.08	360.95	0.05	0.03	223.38	0.05	0.03	223.38	0.05	0.03	223.38
113	Site Drwy Left (Winthrop)				0.05	0.12	386.97	0.05	0.12	386.97	0.05	0.12	386.97
114	Site Drwy Right (Winthrop/Beachmont Parking)				0.05	0.12	386.97	0.05	0.12	386.97	0.05	0.12	386.97
115	Route 1A SB (Boardman/U-Turn)	0.26	0.41	404.24	0.05	0.18	250.76	0.05	0.18	250.76	0.05	0.18	250.76
116	Route 1A NB (Curtis/U-Turn)	0.26	0.21	403.06	0.05	0.09	250.01	0.05	0.09	250.01	0.05	0.09	250.01



**Suffolk Downs**

**Mesoscale Roadway Data**

Link No.	Description	Speed Limit (mph)	Link Length (miles)	Grade (%)	Directions
1	Prescott St (Bennington/Chelsea)	25	0.02	0.0	2
2	Chelsea St (Visconti/Prescott)	25	0.46	0.0	2
3	Prescott St (Chelsea/Bremen)	25	0.04	0.5	2
4	Chelsea St (Prescott/Bennington)	25	0.06	0.6	2
5	Chelsea St (Bennington/MobilGas)	25	0.06	1.3	2
6	Chelsea St (MobilGas/Saratoga)	25	0.06	0.3	2
7	Unnamed St (Chelsea/Bennington)	25	0.03	1.3	1
8	Unnamed St (Bennington/Bremen)	25	0.02	0.9	1
9	Bennington St (Chelsea/Unnamed)	25	0.07	0.5	1
10	Bennington St (Unnamed/Neptune)	25	0.11	0.2	2
11	Neptune Rd (Chelsea/Saratoga)	25	0.02	1.9	2
12	Saratoga St (Chelsea/Neptune)	25	0.04	0.0	1
13	Saratoga St (Neptune/Bremen)	25	0.05	1.1	2
14	Neptune Rd (Saratoga/Bremen)	25	0.02	1.9	2
15	Bremen St (Bennington/Neptune)	25	0.03	0.0	1
16	Bremen St (Neptune/Saratoga)	25	0.05	0.8	1
17	Neptune Rd (Bremen/Bennington)	25	0.02	0.0	2
18	Neptune Rd (Bennington/Rt1AOnRamp)	25	0.02	0.0	2
19	Route 1A Onramp (Neptune)	30	0.10	1.9	1
20	Neptune Rd (Rt1A Onramp/Offramp)	25	0.02	0.0	2
21	Route 1A Offramp (Neptune)	30	0.10	-1.9	1
22	Vienna St (Neptune/Bennington)	25	0.07	0.5	1
23	Neptune Rd (Vienna/Frankfort)	25	0.03	3.8	2
24	Bennington St (Neptune/Swift)	30	0.18	0.8	2
25	Swift St (Saratoga/Bennington)	25	0.04	1.4	2
26	Swift St (Bennington/End)	25	0.06	4.1	2
27	Bennington St (Swift/Boardman)	30	0.88	0.1	2
28	Route 1A SB (Curtis/Neptune)	45	0.29	1.3	1
29	Curtis St (Chelsea/Route1A)	25	0.07	2.7	2
30	Route 1A SB (U-Turn/Curtis)	45	0.51	0.4	2
31	Route 1A NB (U-Turn/Boardman)	45	0.21	1.4	2
32	Boardman St (End/Route 1A)	25	0.11	0.5	2
33	Boardman St (Route 1A/Bennington)	25	0.47	0.4	2
34	Boardman St (Bennington/Barnes)	25	0.09	0.8	2
35	Bennington St (Boardman/Crescent)	25	1.10	0.1	2
36	Route 1A (Boardman/Waldemar)	45	0.16	1.8	2
37	Waldemar Ave (Route 1A/Wally)	25	0.73	0.3	2
38	Route 1A (Waldemar/Tomesello)	45	0.09	3.6	2
39	Route 1A (Tomesello/Jughandle)	45	0.08	4.0	2
40	Jughandle (Route 1A)	25	0.10	0.0	1
41	Route 1A (Jughandle/Furlong)	45	0.49	0.0	2
42	Furlong Dr (Route 1A/Tomesello)	25	0.47	0.0	2
43	Route 1A (Furlong/BellCir)	30	0.53	0.9	2
44	Tomesello Dr (Route 1A/Furlong Dr)	25	0.79	0.0	2
45	Tomesello Dr (Furlong/Route145)	25	0.24	0.0	2
46	Winthrop Ave (Beach/Route 16)	25	0.31	0.2	2
47	Harris St (Route16/Beach)	25	0.27	0.5	2
48	Route 16 (Garfield Ave/Winthrop)	35	1.42	0.1	2
49	Route 16 (Washington/Garfield)	35	0.32	1.4	2
50	Garfield Ave (Washington/Route16)	25	0.36	0.3	2
51	Webster Ave (Rt16/Jefferson)	30	0.08	0.7	2
52	Route 16 (Winthrop/Bell Cir)	35	0.32	0.5	2
53	Winthrop Ave (Rt16/Rt1AOnramp)	35	0.12	1.3	2
54	Route 1A Onramp (Rt1A/Winthrop)	30	0.14	-1.8	1
55	Winthrop Ave (Rt1AOnramp/NShoreRd)	40	0.39	0.6	2
56	N Shore Rd (Winthrop Ave/Beach St)	30	0.59	0.4	2
57	Winthrop Ave (N Shore/Tomesello)	40	0.05	0.0	2
58	Shaws Drwy (Winthrop/Tomesello)	15	0.07	0.0	2
59	Winthrop Ave (Tomesello/RBP)	40	0.16	0.0	2
60	Shaws Drwy (RBP)	15	0.05	0.0	1
61	Revere Beach Pkwy (Winthrop/State)	40	0.30	0.1	2
62	Winthrop Ave (RBP/Beachmont Lot)	25	0.13	0.3	2
63	Beachmont Lot (Winthrop Ave)	15	0.07	0.0	2
64	Winthrop Ave (Beachmont Lot/State Rd)	25	0.09	3.2	2
65	State Rd (Winthrop/Ocean)	35	0.26	0.8	2
66	State Rd (Ocean/Winthrop Pkwy)	35	0.09	0.0	2
67	Winthrop Pkwy (State/Leveett)	30	0.39	0.2	2
68	Revere Beach Blvd (State/Beach)	30	0.43	0.0	1
69	Winthrop Ave (Bennington/Crescent)	25	0.18	2.7	2
70	Bennington St (Crescent/Winthrop)	25	0.06	3.5	2
71	Crescent Ave (Bennington/Winthrop)	25	0.17	2.0	2
72	Ocean Ave (RBP/Beach)	30	0.49	0.2	2
73	Beach St (Ocean/RBP)	25	0.03	0.0	1
74	Ocean Ave (Beach/Revere)	30	0.74	0.2	2
75	Beach St (N Shore/Ocean)	25	0.09	1.1	2
76	N Shore Rd (Beach/Butler Cir)	30	0.24	0.9	2
77	Beach St (VFW/N Shore)	25	0.32	0.9	2
78	VFW Pkwy (Bell Cir/Beach St)	35	0.12	0.2	2
79	VFW Pkwy (Beach/Butler Cir)	35	0.32	1.5	2
80	N Shore Rd (Butler Cir/Wonderld Lot)	30	0.09	0.0	2
81	Wonderland MBTA Lot (N Shore Rd)	15	0.11	0.0	1
82	Wonderland MBTA Garage (N Shore Rd)	15	0.11	0.0	2
83	N Shore Rd (MBTA/Revere St)	35	0.35	0.4	2
84	Revere St (N Shore/Ocean)	25	0.17	0.6	2
85	Revere St (Ocean/RBP)	25	0.04	1.9	1
86	N Shore Rd (Revere/Lynnway)	35	1.97	0.1	2
87	Revere St (Rt60/N Shore)	25	0.70	0.1	2
88	Route 60 (Bell Cir/Revere)	40	0.51	0.6	2
89	Revere St (Rt107/Rt60)	25	0.24	0.7	2
90	Route 60 (Revere/Brown Cir)	35	0.37	0.3	2
91	Route 60 (Brown Cir/Charger St)	35	0.41	0.3	2
92	Charger St (Malden/Rt60)	25	0.40	0.9	1
93	Charger St (Rt 60/Ward)	25	0.13	0.7	2
94	Route 60 (Sigourney/Charger)	35	0.17	1.4	2
95	Sigourney St (Malden/Rt60)	25	0.31	0.1	1
96	Sigourney St (Rt60/Retail)	15	0.10	2.7	2
97	Route 60 (Rt1/Sigourney)	35	0.22	1.2	2
98	Lynnway (RBP/N Shore SB Ramp)	25	0.25	0.2	2
99	N Shore SB Ramp (Lynnway/N Shore)	25	0.18	0.6	2
100	Lynnway (SB Ramp/NB Ramps)	25	0.11	0.0	2
101	N Shore NB Offramp (N Shore/Lynnway)	25	0.03	-6.3	1
102	N Shore NB Onramp (N Shore/Lynnway)	25	0.07	1.1	1
103	Rice Ave (Lynnway)	25	0.06	-0.6	1
104	Lancaster Ave (Lynnway)	25	0.20	0.1	2
105	Beach St (Central/Bell Cir)	25	0.34	0.3	2
106	Route 60 (Ctr of Bell Cir)	40	0.06	0.3	2
107	Bell Cir (Rt1A/VFW)	25	0.05	0.0	1
108	Bell Cir (VFW/Rt60)	25	0.05	0.0	1
109	Bell Cir (Rt 60/Beach)	25	0.05	0.0	1
110	Bell Cir (Beach/Rt1A)	25	0.05	0.0	1
111	Broadway (Revere/Brown Cir)	30	0.33	0.7	2
112	Salem Tnpk (Brown Cir/Ballard)	55	2.29	0.0	2
113	Site Drwy Left (Winthrop)	15	0.50	0.0	2
114	Site Drwy Right (Winthrop/Beachmont Parking)	15	0.50	0.0	2
115	Route 1A SB (Boardman/U-Turn)	45	0.21	-1.4	2
116	Route 1A NB (Curtis/U-Turn)	45	0.51	-0.2	2

## Project Data

### TRAFFIC DATA

Project Name	Suffolk Downs
Existing Year	2018
No-Build Year	2040
Build Year	2040
Build with Mitigation Year	2040
Seasonal Adjustment Factor	1.00
K-Factor	6.2%

### Idle Emission Factors

<u>Year</u>	<u>NOx (g/hr)</u>	<u>VOC (g/hr)</u>	<u>CO2 (g/hr)</u>
2018	1.92	1.11	4078.17
2040	0.21	0.55	2485.13