

Supplementary Data Table S1. Percent Darkness During Total Waking Day and During Sleep by City, Season, and Shift by Time Change Condition

			Percent Darkness During Total Waking Day			Percent Darkness During Sleep			Percent Waketimes Before Sunrise		
City	Season	Shift	CTA	DST	ST	CTA	DST	ST	CTA	DST	ST
New York City	Autumn	Day	33%	28%	34%	86%	96%	84%	13%	75%	0%
		Evening	41%	37%	42%	62%	72%	60%	12%	61%	0%
		Night	51%	49%	51%	51%	53%	49%	10%	20%	0%
		School	33%	28%	34%	86%	96%	84%	13%	75%	0%
	Winter	Day	34%	30%	34%	90%	98%	90%	71%	100%	71%
		Evening	41%	36%	41%	67%	79%	67%	58%	100%	51%
		Night	53%	51%	53%	52%	56%	52%	10%	100%	10%
		School	33%	30%	33%	91%	98%	91%	76%	100%	76%
	Spring	Day	21%	19%	25%	85%	89%	77%	23%	45%	0%
		Evening	30%	29%	34%	61%	65%	53%	16%	34%	0%
		Night	42%	41%	40%	42%	45%	47%	0%	10%	0%
		School	22%	19%	25%	85%	91%	78%	33%	63%	0%
	Summer	Day	9%	9%	15%	67%	67%	55%	0%	0%	0%
		Evening	19%	19%	25%	43%	43%	31%	0%	0%	0%
		Night	30%	30%	28%	26%	26%	29%	0%	0%	0%
Chicago	Autumn	Day	33%	28%	34%	85%	95%	83%	79%	100%	73%
		Evening	42%	37%	43%	61%	71%	59%	67%	100%	61%
		Night	51%	49%	51%	51%	53%	49%	40%	100%	20%
		School	33%	28%	34%	86%	95%	84%	81%	100%	75%
	Winter	Day	34%	30%	34%	90%	98%	90%	100%	100%	100%
		Evening	41%	36%	41%	67%	79%	67%	100%	100%	100%
		Night	53%	51%	53%	52%	56%	52%	100%	100%	100%
		School	34%	30%	34%	91%	98%	91%	100%	100%	100%
	Spring	Day	21%	19%	25%	84%	88%	75%	77%	90%	38%
		Evening	31%	29%	34%	60%	64%	52%	63%	78%	31%
		Night	42%	40%	40%	41%	45%	46%	20%	40%	10%
		School	22%	19%	25%	84%	90%	77%	79%	96%	50%
	Summer	Day	8%	8%	15%	65%	65%	53%	0%	0%	0%
		Evening	19%	19%	25%	41%	41%	29%	0%	0%	0%
		Night	29%	29%	28%	25%	25%	28%	0%	0%	0%
El Paso	Autumn	Day	30%	25%	31%	85%	95%	83%	12%	70%	0%
		Evening	39%	34%	40%	61%	71%	59%	12%	58%	0%
		Night	48%	46%	48%	51%	53%	49%	10%	10%	0%
		School	30%	25%	31%	85%	95%	83%	12%	70%	0%
	Winter	Day	30%	26%	30%	88%	97%	88%	60%	97%	60%
		Evening	38%	33%	38%	65%	77%	65%	48%	97%	46%
		Night	49%	48%	49%	51%	54%	51%	10%	100%	10%
		School	30%	26%	30%	89%	98%	89%	71%	97%	71%

		Los Angeles				San Francisco			New York City		
		Day	Evening	Night	School	Day	Evening	Night	Day	Evening	Night
Los Angeles	Spring	Day	20%	18%	24%	87%	91%	79%	41%	63%	0%
		Evening	30%	28%	34%	64%	68%	56%	31%	50%	0%
		Night	42%	42%	40%	42%	45%	48%	0%	10%	0%
		School	21%	18%	24%	87%	93%	81%	46%	75%	0%
	Summer	Day	11%	11%	17%	76%	76%	64%	0%	0%	0%
		Evening	22%	22%	27%	52%	52%	40%	0%	0%	0%
		Night	34%	34%	32%	32%	32%	35%	0%	0%	0%
	Autumn	Day	32%	26%	33%	83%	93%	81%	76%	100%	70%
		Evening	40%	36%	42%	60%	69%	57%	64%	100%	56%
		Night	49%	47%	49%	50%	53%	49%	30%	100%	10%
		School	31%	26%	33%	84%	94%	82%	81%	100%	75%
	Winter	Day	32%	27%	32%	87%	97%	87%	71%	100%	71%
Evening		40%	34%	40%	64%	76%	64%	66%	100%	59%	
Night		50%	49%	50%	51%	55%	51%	30%	100%	30%	
School		32%	27%	32%	88%	98%	88%	82%	100%	82%	
Spring	Day	21%	19%	26%	85%	89%	77%	75%	88%	38%	
	Evening	31%	29%	35%	60%	65%	52%	65%	81%	29%	
	Night	42%	41%	40%	42%	45%	47%	30%	50%	10%	
	School	22%	20%	26%	85%	91%	78%	83%	100%	50%	
Summer	Day	12%	12%	18%	72%	72%	60%	0%	0%	0%	
	Evening	22%	22%	28%	49%	49%	36%	0%	0%	0%	
	Night	33%	33%	31%	31%	31%	34%	0%	0%	0%	
Anchorage	Autumn	Day	34%	34%	34%	86%	96%	84%	94%	100%	88%
		Evening	40%	37%	41%	62%	72%	60%	91%	100%	84%
		Night	56%	53%	56%	51%	53%	49%	80%	100%	60%
		School	34%	34%	34%	86%	96%	84%	94%	100%	88%
	Winter	Day	41%	41%	41%	90%	98%	90%	100%	100%	100%
		Evening	43%	41%	43%	67%	79%	67%	100%	100%	100%
		Night	60%	56%	60%	52%	56%	52%	100%	100%	100%
		School	41%	42%	41%	91%	98%	91%	100%	100%	100%
	Spring	Day	12%	11%	16%	85%	89%	77%	25%	44%	3%
		Evening	22%	21%	26%	61%	65%	53%	16%	32%	0%
		Night	38%	39%	37%	42%	45%	47%	0%	10%	0%
		School	14%	12%	17%	85%	91%	78%	33%	58%	4%
	Summer	Day	0%	0%	0%	67%	67%	55%	0%	0%	0%
		Evening	0%	0%	0%	43%	43%	31%	0%	0%	0%
		Night	0%	0%	0%	26%	26%	29%	0%	0%	0%

Supplementary Data Table S2. Average Effectiveness During Work Day and Commutes by City, Season, and Shift by Time Change Condition

			Average Effectiveness Commute to Work			Average Effectiveness at Work			Average Effectiveness Commute Home		
City	Season	Shift	CTA	DST	ST	CTA	DST	ST	CTA	DST	ST
New York City	Autumn	Day	99.26	99.04	99.11	97.63	97.52	97.55	98.57	98.39	98.42
		Evening	96.71	96.66	96.57	97.53	97.60	97.55	87.37	87.73	87.81
		Night	90.39	91.42	91.37	73.61	73.97	73.94	70.01	69.41	69.45
		School	97.64	97.37	97.41	98.18	98.09	98.10	96.22	96.05	96.09
	Winter	Day	99.03	99.01	99.03	97.51	97.50	97.51	98.35	98.34	98.35
		Evening	96.60	96.55	96.60	97.58	97.53	97.58	87.87	88.21	87.87
		Night	91.19	91.19	91.19	73.85	73.85	73.85	69.54	69.54	69.54
		School	97.43	97.41	97.43	98.11	98.11	98.11	96.09	96.07	96.09
	Spring	Day	98.86	99.06	99.07	97.41	97.53	97.53	98.17	98.38	98.34
		Evening	96.38	96.56	96.62	97.48	97.60	97.67	88.49	88.30	88.00
		Night	90.78	91.12	91.09	72.64	73.80	73.80	67.22	69.53	69.55
		School	96.96	97.31	97.31	97.89	98.06	98.06	95.86	96.02	96.04
	Summer	Day	99.08	99.08	99.12	97.53	97.53	97.56	98.40	98.40	98.40
		Evening	96.79	96.79	96.64	97.60	97.60	97.56	87.11	87.11	87.46
		Night	91.19	91.19	91.13	73.85	73.85	73.84	69.54	69.54	69.57
Chicago	Autumn	Day	99.26	99.04	99.11	97.63	97.52	97.55	98.57	98.39	98.42
		Evening	96.73	96.66	96.60	97.55	97.60	97.55	87.33	87.73	87.77
		Night	90.39	91.42	91.37	73.61	73.97	73.94	70.01	69.41	69.45
		School	98.48	98.25	98.27	98.14	98.06	98.07	96.33	96.18	96.21
	Winter	Day	99.03	99.01	99.03	97.51	97.50	97.51	98.35	98.34	98.35
		Evening	96.60	96.55	96.60	97.58	97.53	97.58	87.87	88.21	87.87
		Night	91.19	91.19	91.19	73.85	73.85	73.85	69.54	69.54	69.54
		School	98.29	98.28	98.29	98.08	98.08	98.08	96.21	96.19	96.21
	Spring	Day	98.85	99.06	99.06	97.40	97.53	97.51	98.15	98.38	98.32
		Evening	96.35	96.55	96.62	97.45	97.60	97.67	88.57	88.31	88.00
		Night	90.78	91.12	91.09	72.64	73.80	73.79	67.22	69.53	69.55
		School	97.83	98.19	98.17	97.86	98.04	98.01	95.94	96.15	96.12
	Summer	Day	99.09	99.09	99.12	97.54	97.54	97.56	98.42	98.42	98.40
		Evening	96.77	96.77	96.64	97.61	97.61	97.56	87.27	87.27	87.46
		Night	91.19	91.19	91.13	73.85	73.85	73.84	69.54	69.54	69.57
El Paso	Autumn	Day	99.26	99.04	99.11	97.63	97.52	97.55	98.57	98.39	98.42
		Evening	96.73	96.66	96.60	97.55	97.60	97.56	87.32	87.73	87.76
		Night	90.39	91.42	91.37	73.61	73.97	73.94	70.01	69.41	69.45
		School	99.31	99.08	99.15	97.65	97.54	97.57	98.63	98.43	98.46
	Winter	Day	99.09	99.01	99.09	97.55	97.50	97.55	98.38	98.34	98.38
		Evening	96.45	96.55	96.45	97.53	97.53	97.53	88.20	88.21	88.20
		Night	91.13	91.19	91.13	73.84	73.85	73.84	69.57	69.54	69.57
		School	97.94	97.89	97.94	97.98	97.92	97.98	96.54	96.51	96.54
	Spring	Day	98.83	99.02	99.09	97.39	97.51	97.54	98.15	98.36	98.36

Los Angeles		Evening	96.46	96.64	96.62	97.51	97.64	97.67	88.32	88.13	88.00
		Night	90.76	91.14	91.09	72.63	73.80	73.80	67.24	69.52	69.55
		School	97.42	97.76	97.81	97.73	97.86	97.92	96.21	96.43	96.45
		Day	99.12	99.12	99.12	97.56	97.56	97.56	98.40	98.40	98.40
	Summer	Evening	96.64	96.64	96.65	97.56	97.56	97.55	87.46	87.46	87.39
		Night	91.13	91.13	91.13	73.84	73.84	73.84	69.57	69.57	69.57
	Autumn	Day	99.26	99.04	99.11	97.63	97.52	97.55	98.57	98.39	98.42
		Evening	96.75	96.66	96.65	97.57	97.60	97.57	87.25	87.73	87.59
		Night	90.39	91.42	91.37	73.61	73.97	73.94	70.01	69.41	69.45
		School	98.22	97.98	98.00	98.26	98.17	98.19	96.20	96.06	96.09
	Winter	Day	99.09	99.01	99.09	97.55	97.50	97.55	98.38	98.34	98.38
		Evening	96.45	96.59	96.45	97.53	97.56	97.53	88.20	88.04	88.20
		Night	91.13	91.19	91.13	73.84	73.85	73.84	69.57	69.54	69.57
		School	98.04	98.03	98.04	98.21	98.19	98.21	96.11	96.09	96.11
	Spring	Day	98.85	99.06	99.07	97.41	97.53	97.53	98.17	98.38	98.34
		Evening	96.38	96.56	96.63	97.47	97.60	97.66	88.45	88.30	87.97
		Night	90.78	91.12	91.09	72.64	73.80	73.80	67.22	69.53	69.55
		School	97.57	97.92	97.89	97.99	98.16	98.16	95.86	96.03	96.04
	Summer	Day	99.12	99.12	99.09	97.56	97.56	97.53	98.40	98.40	98.37
		Evening	96.64	96.64	96.65	97.56	97.56	97.55	87.46	87.46	87.39
		Night	91.13	91.13	91.13	73.84	73.84	73.84	69.57	69.57	69.57
Anchorage	Autumn	Day	99.20	99.04	99.04	97.60	97.52	97.52	98.55	98.39	98.39
		Evening	96.71	96.56	96.62	97.54	97.55	97.56	87.80	88.37	88.05
		Night	90.46	91.42	91.42	73.65	73.97	73.97	69.97	69.41	69.41
		School	98.90	98.71	98.71	97.99	97.91	97.91	96.46	96.32	96.32
	Winter	Day	99.01	99.01	99.01	97.50	97.50	97.50	98.34	98.34	98.34
		Evening	96.52	96.49	96.52	97.51	97.50	97.51	88.41	88.57	88.41
		Night	91.19	91.19	91.19	73.85	73.85	73.85	69.54	69.54	69.54
		School	98.76	98.76	98.76	97.94	97.94	97.94	96.34	96.34	96.34
	Spring	Day	98.80	99.02	99.07	97.38	97.51	97.53	98.14	98.36	98.37
		Evening	96.42	96.62	96.56	97.48	97.63	97.62	88.46	88.22	88.24
		Night	90.77	91.15	91.09	72.64	73.81	73.80	67.23	69.52	69.55
		School	98.33	98.65	98.68	97.73	97.88	97.91	96.05	96.26	96.29
	Summer	Day	99.09	99.09	99.09	97.54	97.54	97.54	98.43	98.43	98.43
		Evening	96.51	96.51	96.51	97.49	97.49	97.49	88.50	88.50	88.50
		Night	91.19	91.19	91.19	73.85	73.85	73.85	69.54	69.54	69.54

Supplementary Data Table S3. Average Effectiveness and Percent Darkness During Morning Rush Hour by City, Season, and Time Change Condition

		Average Effectiveness			Percent Darkness		
City	Season	CTA	DST	ST	CTA	DST	ST
New York City	Autumn	88.97	88.61	88.66	0%	3%	0%
	Winter	88.67	88.65	88.67	0%	33%	0%
	Spring	87.68	88.63	88.64	0%	0%	0%
	Summer	84.31	84.31	84.35	0%	0%	0%
Chicago	Autumn	89.25	88.90	88.94	0%	1%	0%
	Winter	88.95	88.94	88.95	0%	25%	0%
	Spring	87.97	88.93	88.93	0%	0%	0%
	Summer	84.31	84.31	84.35	0%	0%	0%
El Paso	Autumn	87.83	88.76	88.82	0%	1%	0%
	Winter	84.35	84.35	84.35	0%	19%	0%
	Spring	89.53	89.18	89.24	0%	0%	0%
	Summer	88.87	88.81	88.87	0%	0%	0%
Los Angeles	Autumn	87.88	88.84	88.84	0%	0%	0%
	Winter	84.35	84.35	84.33	0%	14%	0%
	Spring	89.16	88.81	88.85	0%	0%	0%
	Summer	88.90	88.86	88.90	0%	0%	0%
Anchorage	Autumn	89.36	89.05	89.05	40%	88%	34%
	Winter	89.10	89.10	89.10	87%	100%	87%
	Spring	88.12	89.06	89.10	1%	7%	0%
	Summer	84.31	84.31	84.31	0%	0%	0%
Included Schedules by Shift		Day	Evening	Night	School	Total	
Commute to Work		20	0	0	15	55	
Commute Home		0	0	20	0		

Supplementary Data Table S4. Average Effectiveness and Percent Darkness During Evening Rush Hour by City, Season, and Time Change Condition

Average Effectiveness						Percent Darkness		
Evening	New York City	Autumn	97.64	97.53	97.50	19%	0%	21%
		Winter	97.48	97.45	97.48	20%	0%	20%
		Spring	97.27	97.47	97.48	0%	0%	0%
		Summer	97.60	97.60	97.52	0%	0%	0%
	Chicago	Autumn	97.65	97.53	97.51	24%	0%	27%
		Winter	97.48	97.45	97.48	25%	0%	25%
		Spring	97.25	97.46	97.47	0%	0%	0%
		Summer	97.59	97.59	97.52	0%	0%	0%
	El Paso	Autumn	97.65	97.53	97.51	3%	0%	3%
		Winter	97.42	97.45	97.42	0%	0%	0%
		Spring	97.31	97.50	97.49	0%	0%	0%
		Summer	97.52	97.52	97.53	0%	0%	0%
	Los Angeles	Autumn	97.66	97.53	97.54	13%	0%	14%
		Winter	97.42	97.46	97.42	9%	0%	9%
		Spring	97.27	97.47	97.49	0%	0%	0%
		Summer	97.52	97.52	97.51	0%	0%	0%
	Anchorage	Autumn	97.63	97.48	97.50	7%	0%	7%
		Winter	97.43	97.41	97.43	17%	0%	17%
		Spring	97.28	97.49	97.46	0%	0%	0%
		Summer	97.47	97.47	97.47	0%	0%	0%
Included Schedules by Shift		Day	Evening		Night	School		Total
Commute to Work		0	20		0	0		40
Commute Home		20	0		0	0		