

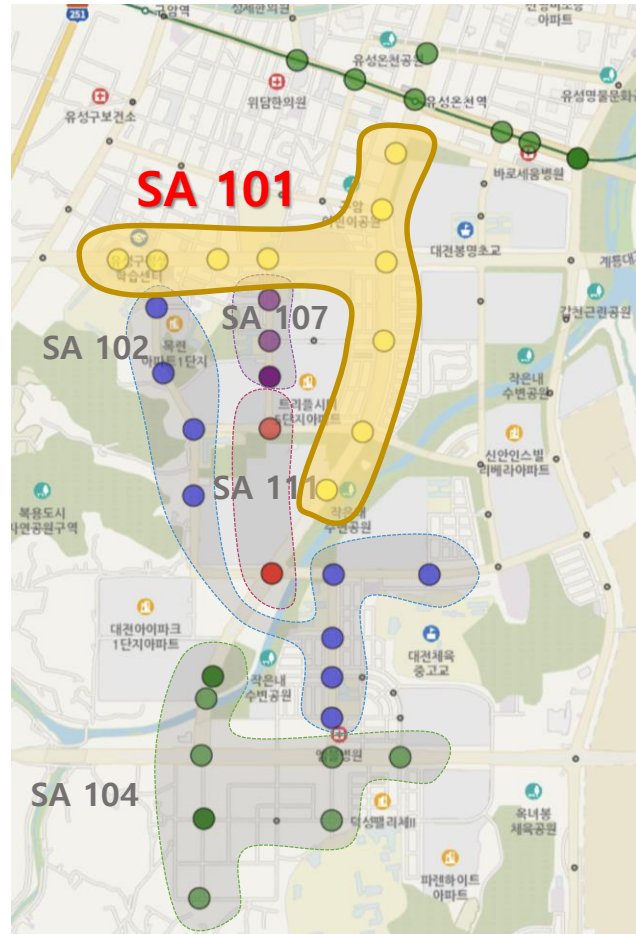
신호 최적화 실험

2023/10/11

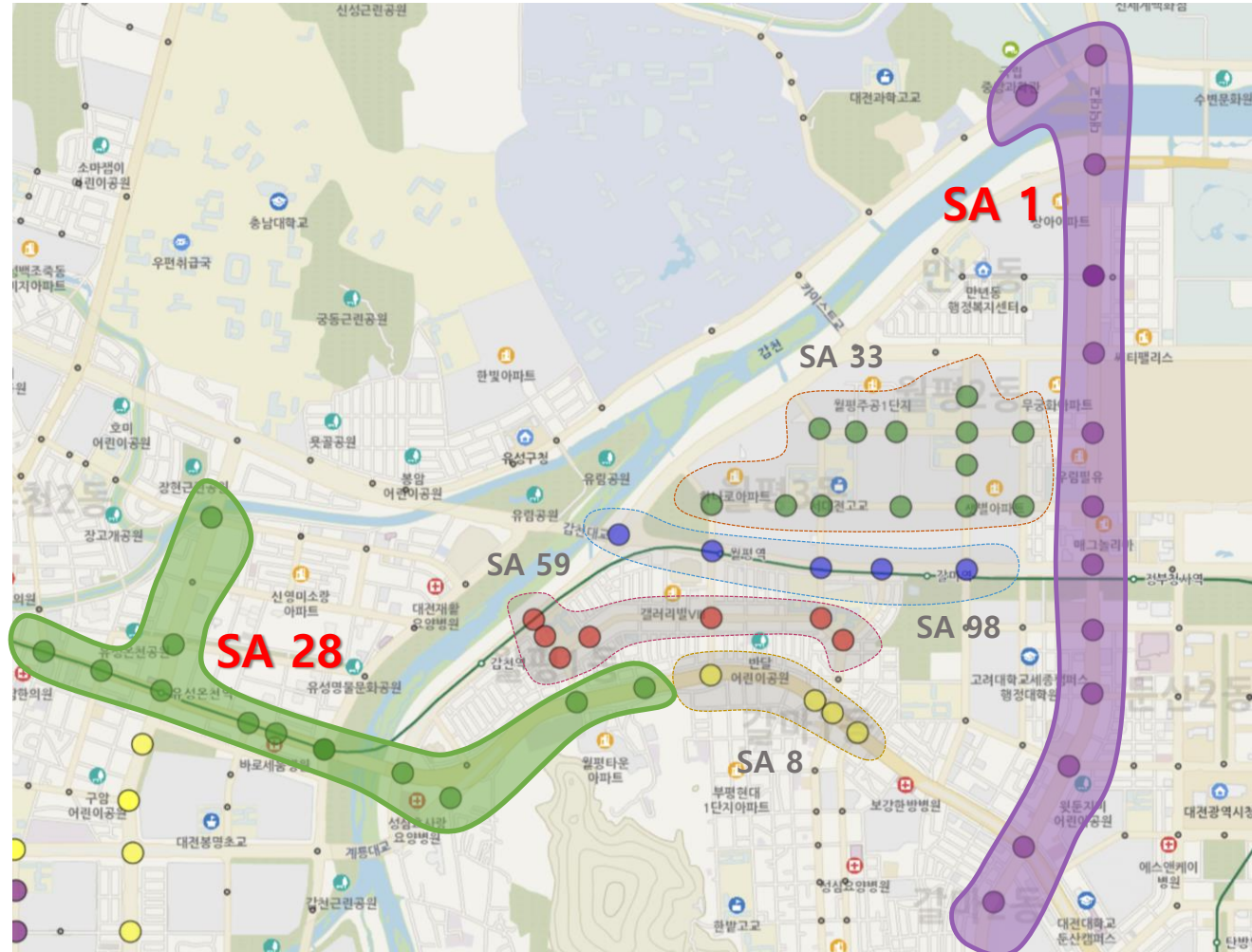
대전

최소 시간 및 주기 만족 조건

도안 SA101



월평(SA28), 둔산(SA1)

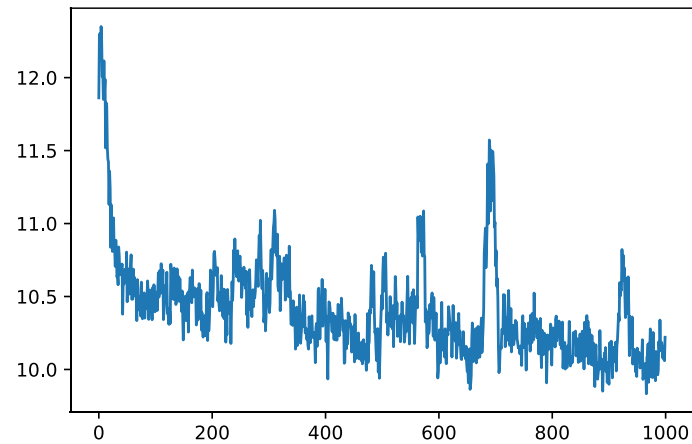


신규 시나리오 (6월), Epoch 1590*10, Dirichlet(주기 고정)

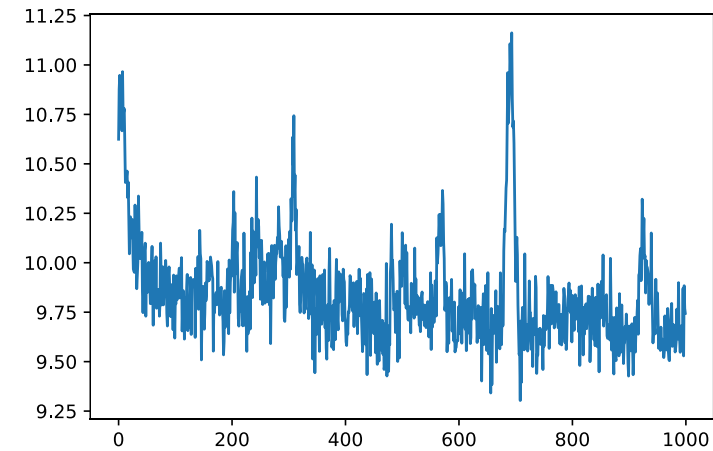
Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	11.0695	10.2718	7.21%	+5.72%
Test	11.0119	10.2138	7.25%	+6.06% (Max. +6.84%)

신규 시나리오 (6월), 10*708 epochs, Dirichlet(주기 고정)

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	13.3167	9.9987	+24.92%	20.16%
Test	12.6688	9.8540	+22.22%	18.03% (Max. +19.84%)



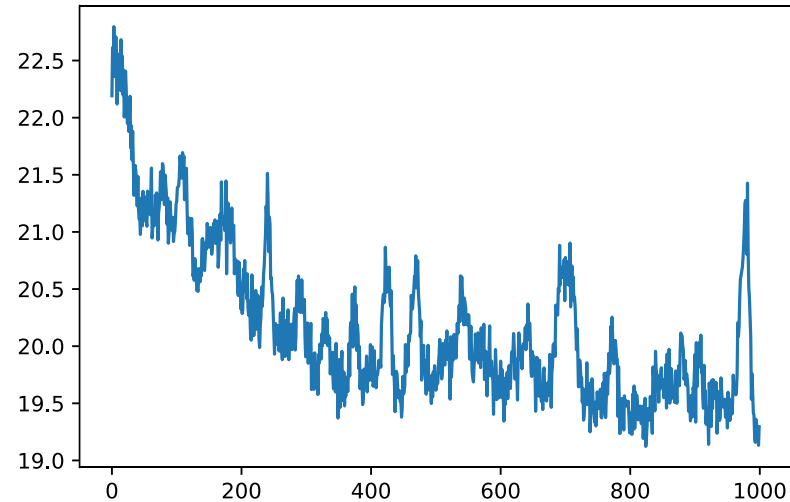
Training



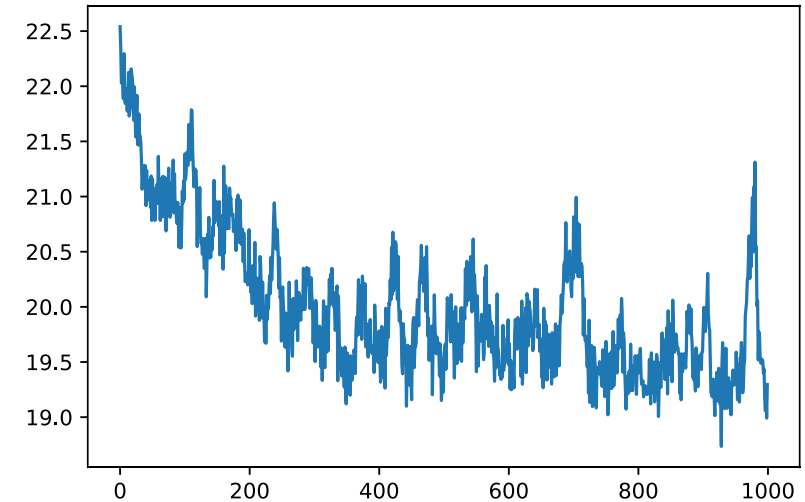
Validation

신규 시나리오 (6월), 10*928 epochs, Dirichlet(주기 고정)

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	23.2985	19.0542	+18.22%	+14.84%
Test	23.3926	19.1219	+18.26%	+14.86% (Max. +18.59%)



Training



Validation

대전

최소 및 최대 시간 만족 조건

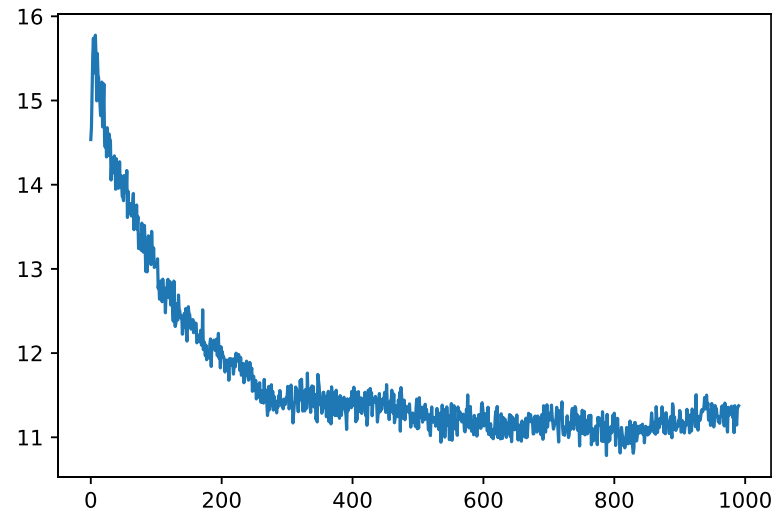
[illegible]

신규 시나리오 (6월), Epoch 1470*10, Min~Max.

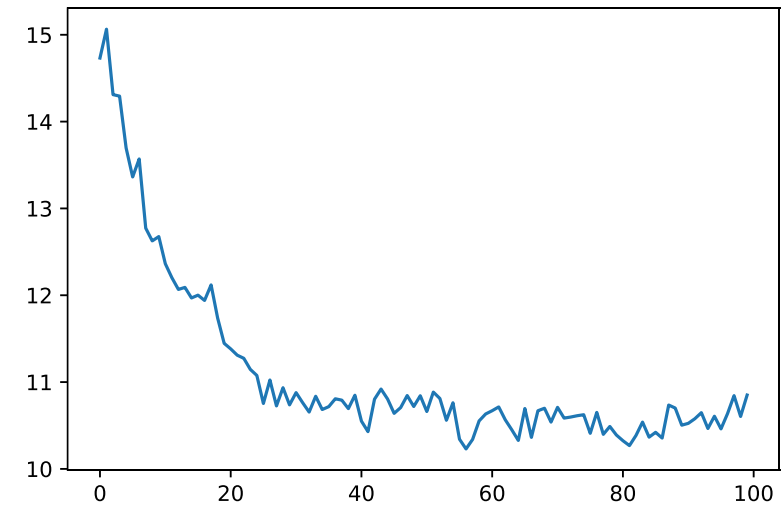
Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	11.0695	10.2739	7.19%	+5.00%
Test	11.0119	10.2385	7.02%	+4.72% (Max. +5.56%)

신규 수요(6월), 10*560 epochs, Dirichlet(주기 고정)

수요	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	13.3167	10.9152	+18.03%	+13.71%
Test	12.6688	10.5445	+16.77%	+12.69% (Max. +16.02%)



Training

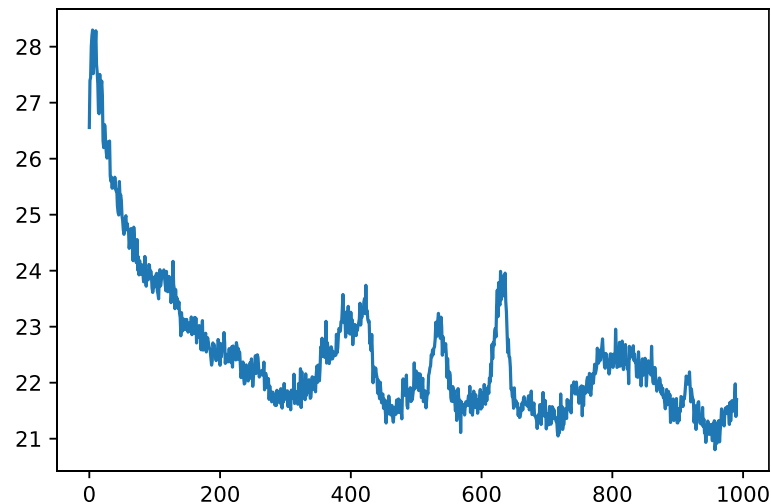


Validation

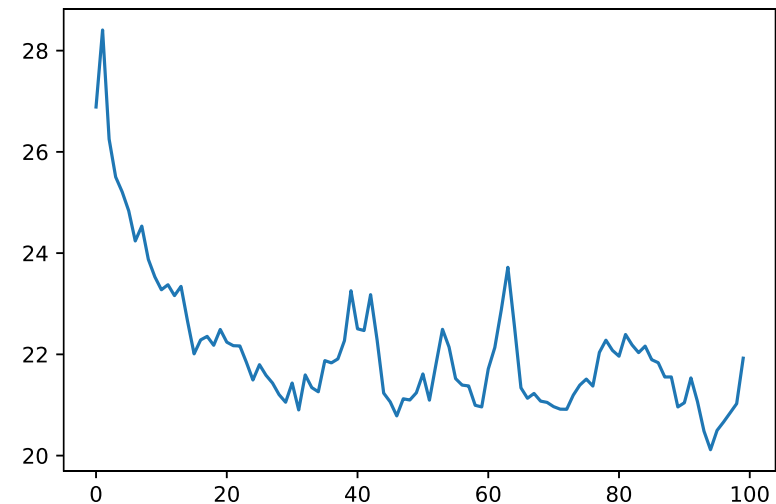
SA1(둔산)

신규 시나리오 (6월), 10*940 epochs, MinMax

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	23.2985	20.7920	+10.76%	+8.62%
Test	23.3926	20.4129	+12.74%	+9.93% (Max. +14.95%)



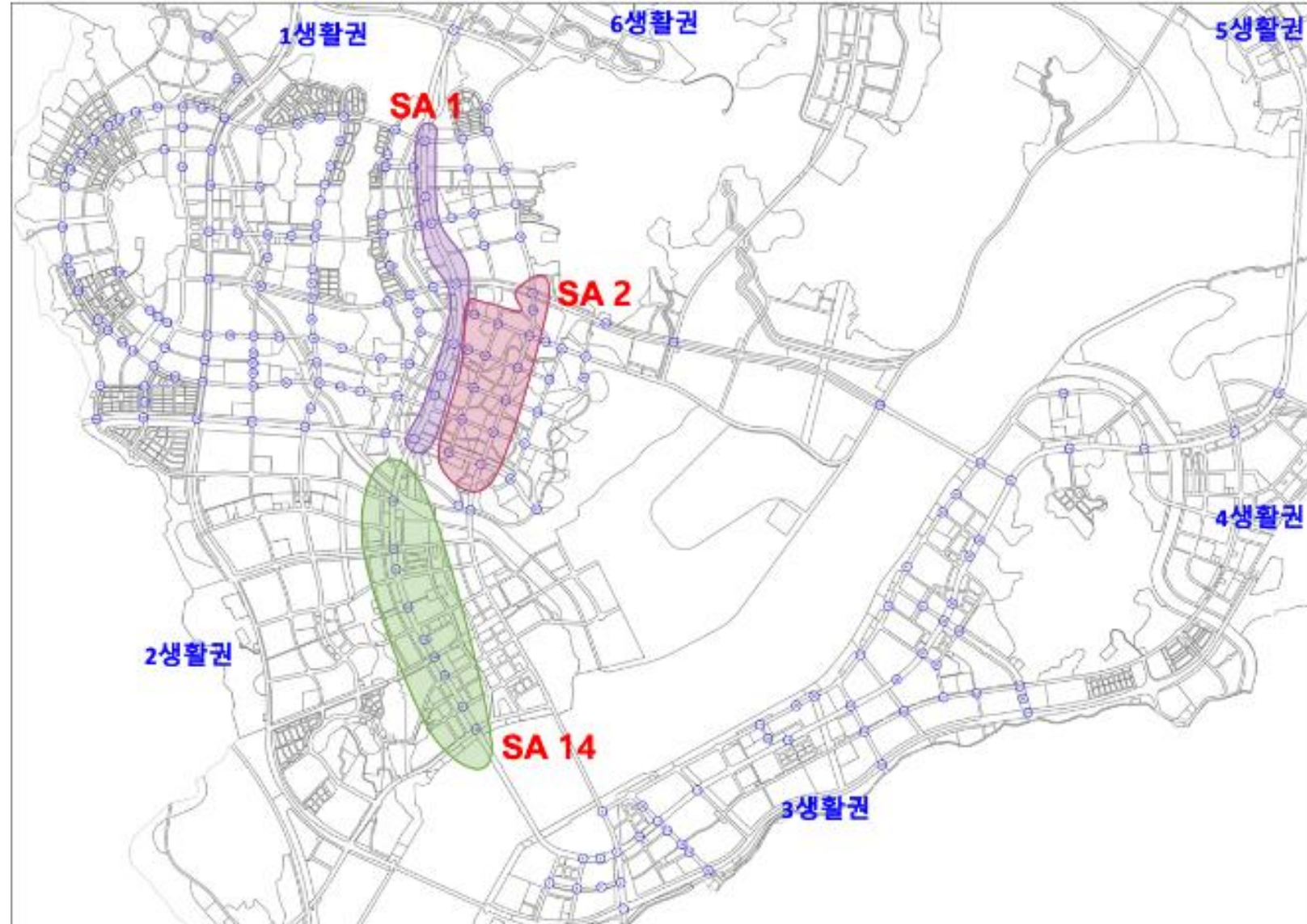
Training



Validation

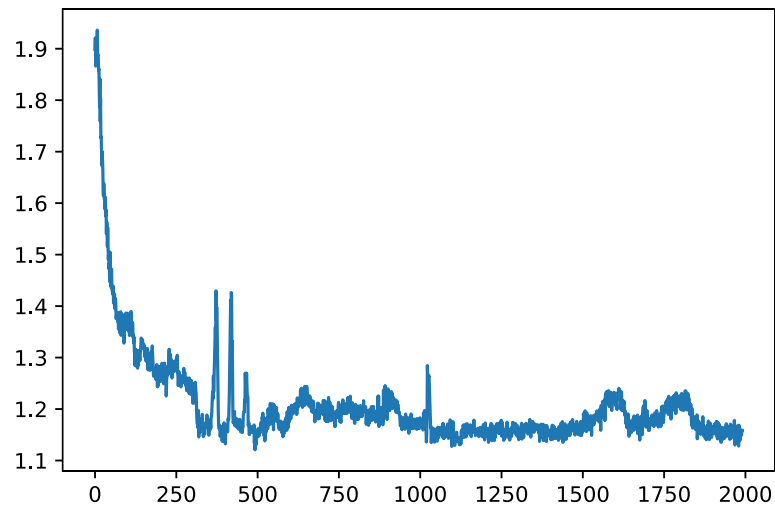
세종

최소 시간 및 주기 만족 조건

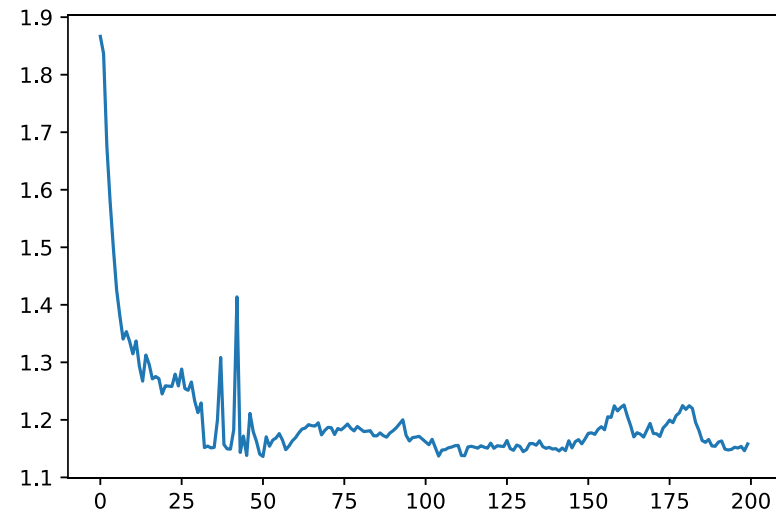


신규 시나리오 (6월), 10*500 epochs, Dirichlet(주기 고정)

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	1.8262	1.1487	+37.10%	+23.59%
Test	1.8719	1.1660	+37.71%	+24.08% (Max. +24.85%)



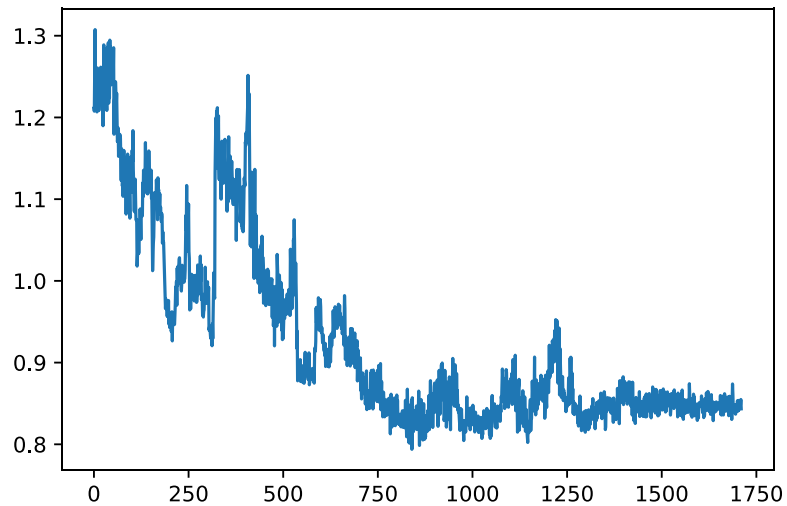
Training



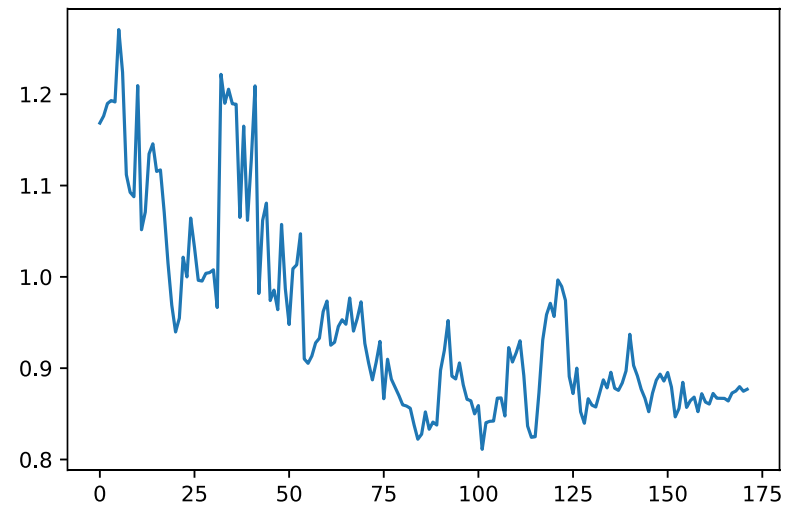
Validation

신규 시나리오 (6월), 10*1010 epochs, Dirichlet(주기 고정)

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	1.0968	0.7835	+28.57%	+17.62%
Test	1.0692	0.7594	+28.97%	+18.08% (Max. +19.25%)



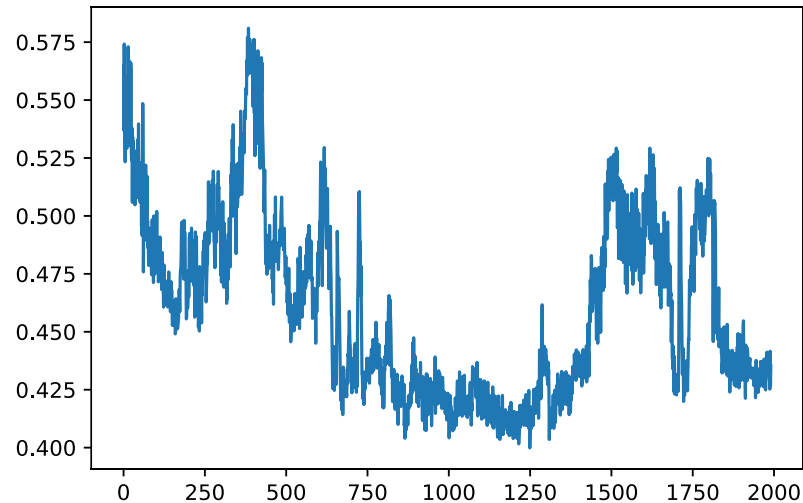
Training



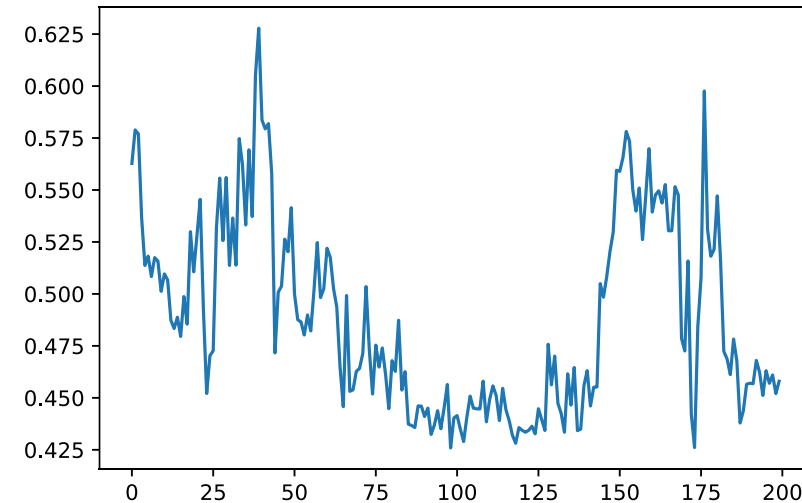
Validation

신규 시나리오 (6월), 10*980 epochs, Dirichlet(주기 고정)

Scenario	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	0.4959	0.4069	+17.95%	+10.42%
Test	0.5147	0.4020	+21.90%	+12.59% (Max. +13.66%)



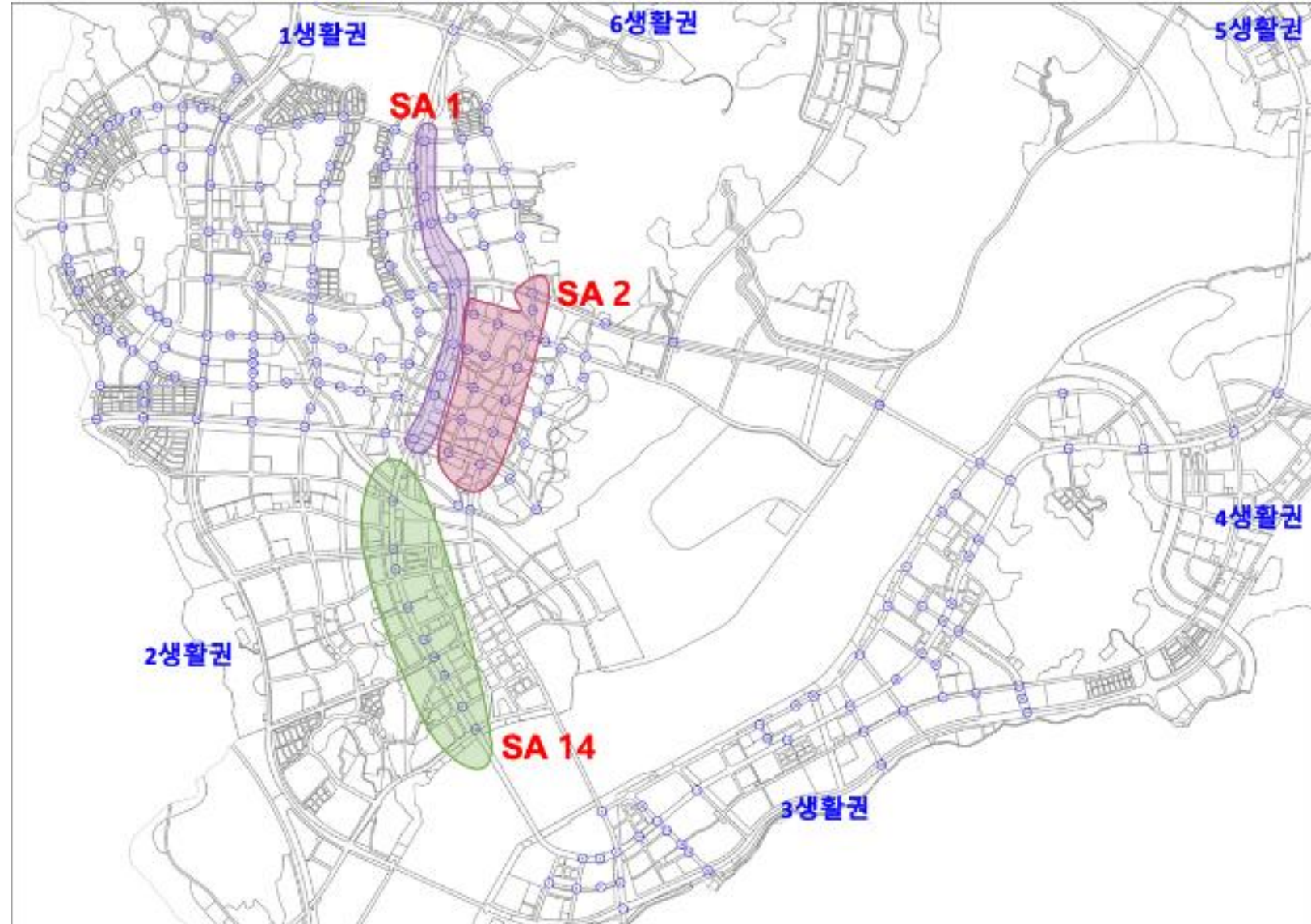
Training



Validation

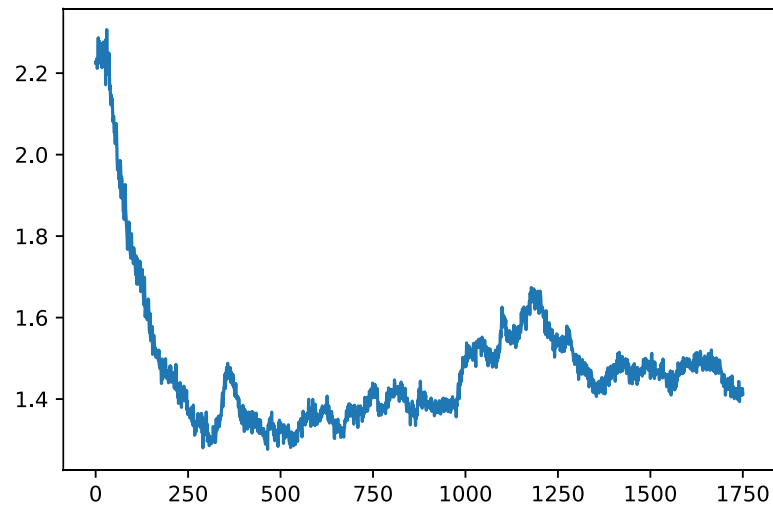
세종

최소 및 최대 시간 만족 조건

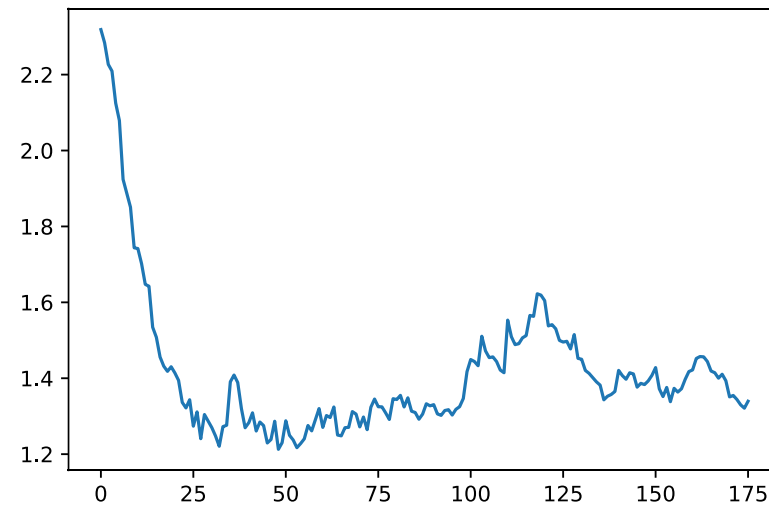


2022년 6월 수요, 10*480 epochs, Min-Max.

수요	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	1.8262	1.2469	+31.72%	+20.23%
Test	1.8719	1.2744	+31.92%	+20.61% (Max. +21.89%)



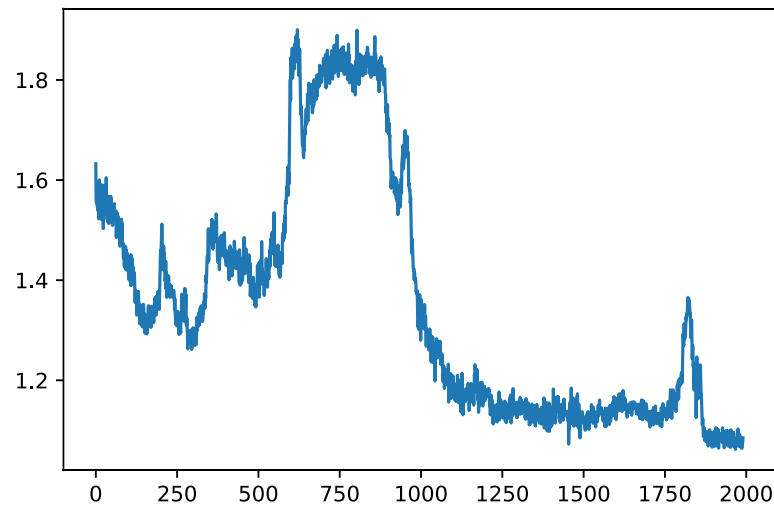
Training



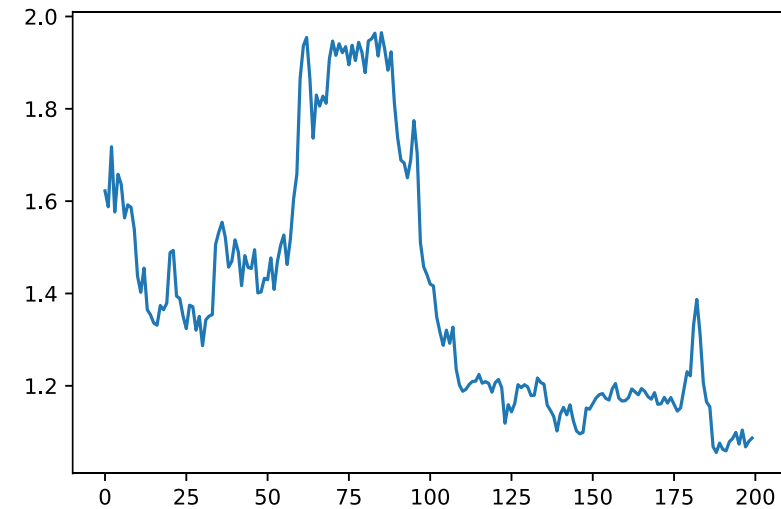
Validation

2022년 6월 수요, 10*1880 epochs, Min-Max

수요	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	1.0968	1.0398	+5.20%	+3.06%
Test	1.0692	1.0071	+5.81%	+3.39% (Max. +5.27%)



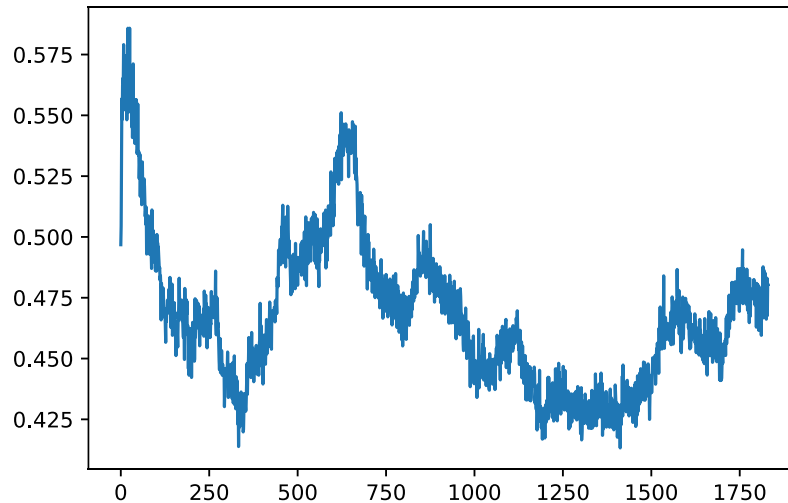
Training



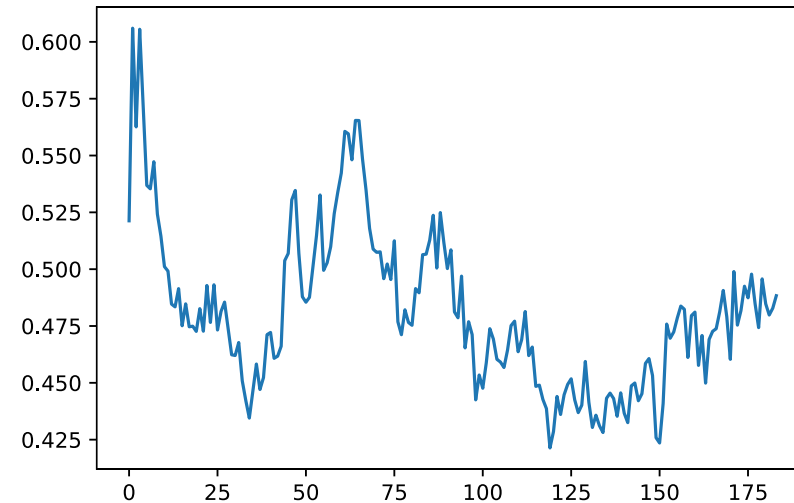
Validation

2022년 6월 수요일, 10*1190 epochs, Min-Max

수요일	Reward (WQ)		Improvement %	
	고정 신호	RL	Reward (WQ)	Avg. Travel Time
Training	0.4959	0.4028	+18.77%	+9.23%
Test	0.5147	0.4136	+19.64%	+9.39% (Max. +11.37%)



Training



Validation

Q & A