

Parameters set by City / OC Transpo	Peak Passenger Comfort Load Standard - Standees/m ²	3.33	
	Off-peak Passenger Comfort Load Standard - Standees/m ²	0.80	
	Minimum seated share of required service capacity	40%	
	Minimum Terminal Time at each terminal	3.00 or headway, whichever is less	
	Terminal time below which step-back operation required	3.00	
	Length of Alignment (km)	Baseline-Trim	33.31
		Moodie-Trim	36.47
		Moodie-Blair	24.73
		Moodie-Lincoln Fields	6.05

Days per year	Time periods	Start	End	Duration of period	Calendar Year Service Level Contract Year	2018-2019	2020-21	2022	2023	2024-25	2026-30	2031-35	2036-40	2041-46	2047-48	Stage 1 Percentages
						1 N/A	2 N/A	3 N/A	3a N/A	4 N/A	5 N/A	6 N/A	7 N/A	8 N/A	9 N/A	
						Maximum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	Minimum Service Capacity (pphpd)	
Monday-Thursday																
201	Early morning	5:00	6:30	1.5	8.0	1,351	1,435	1,518	1,331	1,331	1,515	1,653	1,819	1,819	1,819	13%
201	Morning peak	6:30	9:00	2.5	5.0	10,700	11,360	12,020	10,537	10,537	12,000	13,091	14,400	14,400	14,400	
201	Midday	9:00	14:45	5.75	5.0	4,168	4,425	4,682	4,105	4,105	4,675	5,100	5,609	5,609	5,609	39%
201	Afternoon peak	14:45	18:00	3.25	5.0	8,833	9,377	9,922	8,698	8,698	9,906	10,806	11,887	11,887	11,887	83%
201	Early evening	18:00	21:30	3.5	5.0	2,156	2,288	2,421	2,123	2,123	2,417	2,637	2,901	2,901	2,901	20%
201	Late evening	21:30	23:00	1.5	8.0	1,377	1,462	1,547	1,356	1,356	1,545	1,685	1,854	1,854	1,854	13%
201	Night	23:00	1:00	2	15.0	300	319	337	296	296	337	367	404	404	404	3%
Friday																
51	Early morning	5:00	6:30	1.5	8.0	1,351	1,435	1,518	1,331	1,331	1,515	1,653	1,819	1,819	1,819	13%
51	Morning peak	6:30	9:00	2.5	5.0	10,700	11,360	12,020	10,537	10,537	12,000	13,091	14,400	14,400	14,400	100%
51	Midday	9:00	14:45	5.75	5.0	4,168	4,425	4,682	4,105	4,105	4,675	5,100	5,609	5,609	5,609	39%
51	Afternoon peak	14:45	18:00	3.25	5.0	8,833	9,377	9,922	8,698	8,698	9,906	10,806	11,887	11,887	11,887	83%
51	Early evening	18:00	21:30	3.5	5.0	2,156	2,288	2,421	2,123	2,123	2,417	2,637	2,901	2,901	2,901	20%
51	Late evening	21:30	23:00	1.5	8.0	1,377	1,462	1,547	1,356	1,356	1,545	1,685	1,854	1,854	1,854	13%
51	Night	23:00	2:00	3	8.0	713	757	802	703	703	800	873	960	960	960	7%
Saturday																
53	Daytime	6:00	19:00	13	5.0	1,593	1,691	1,789	1,568	1,568	1,786	1,948	2,143	2,143	2,143	15%
53	Evening	19:00	23:00	4	8.0	1,171	1,243	1,315	1,153	1,153	1,313	1,432	1,575	1,575	1,575	11%
53	Night	23:00	2:00	3	8.0	713	757	802	703	703	800	873	960	960	960	7%
Sunday																
60	Daytime	8:00	19:00	11	5.0	1,254	1,331	1,408	1,235	1,235	1,406	1,534	1,687	1,687	1,687	12%
60	Evening	19:00	23:00	4	10.0	701	744	787	690	690	786	857	943	943	943	7%

Notes:

- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Morning Peak Minimum Service Capacity for SL 1, 2, and 3 based on Stage 1 ridership forecasts.
- Morning Peak Minimum Service Capacity for SL 3a, 4, 5, 6, 7, 8, 9 based on Stage 2 ridership forecasts.

		Stage 2 Service Planning Summary																				
Calendar Year	2018-2019				2020-2021				2022				2023				2024-25					
Service Level	1 (Stage 1)				2 (Stage 1)				3 (Stage 1)				3a				4					
System	Stage 1				Stage 1				Stage 1				Stage 1 + Confed East				Stage 2					
Summary Totals																						
Minimum Service Capacity - AM Peak (pphd)		10,700				11,360				12,020				10,537				10,537				
Peak Vehicles in Service		30				32				34				46				64				
Total Fleet Size		32				34				38				50				72				
Annual Revenue Train Hours		73,809				76,707				78,786				120,238				162,542				
Aggregate Annual Driver Hours Target		73,809				76,707				78,786				120,238				162,542				
Annual Revenue Vehicle Kilometres		3,646,807				3,777,995				3,910,890				6,910,000				9,960,000				
Time periods	Start	End	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km
Monday-Thursday																						
Early morning	5:00	6:30	8:00	13.3	13.3	721	8:00	13.3	13.3	721	8:00	13.3	13.3	721	8:00	27.6	27.6	1,711	8:00	38.5	38.5	2,687
Morning peak	6:30	9:00	3:22	37.5	37.5	2,256	3:10	40.0	40.0	2,395	3:00	42.5	42.5	2,534	3:25	57.5	57.5	3,841	3:25	80.0	80.0	5,612
Midday	9:00	14:45	4:42	63.3	63.3	3,720	4:25	69.0	69.0	3,949	4:11	74.8	74.8	4,179	4:46	103.5	103.5	7,183	4:46	143.8	143.8	10,104
Afternoon peak	14:45	18:00	4:05	42.3	42.3	2,421	3:50	45.5	45.5	2,570	3:38	45.5	45.5	2,720	4:08	61.8	61.8	4,122	4:08	87.8	87.8	6,022
Early evening	18:00	21:30	5:00	38.5	38.5	2,125	5:00	38.5	38.5	2,125	5:00	38.5	38.5	2,125	5:00	63.0	63.0	4,167	5:00	80.5	80.5	5,862
Late evening	21:30	23:00	8:00	10.5	10.5	569	8:00	10.5	10.5	569	8:00	10.5	10.5	569	8:00	18.0	18.0	1,116	8:00	22.5	22.5	1,570
Night	23:00	1:00	15:00	8.0	8.0	405	15:00	8.0	8.0	405	15:00	8.0	8.0	405	15:00	12.0	12.0	794	15:00	20.0	20.0	1,260
Friday																						
Early morning	5:00	6:30	8:00	13.3	13.3	721	8:00	13.3	13.3	721	8:00	13.3	13.3	721	8:00	27.6	27.6	1,711	8:00	38.5	38.5	2,687
Morning peak	6:30	9:00	3:22	37.5	37.5	2,256	3:10	40.0	40.0	2,395	3:00	42.5	42.5	2,534	3:25	57.5	57.5	3,841	3:25	80.0	80.0	5,612
Midday	9:00	14:45	4:42	63.3	63.3	3,720	4:25	69.0	69.0	3,949	4:11	74.8	74.8	4,179	4:46	103.5	103.5	7,183	4:46	143.8	143.8	10,104
Afternoon peak	14:45	18:00	4:05	42.3	42.3	2,421	3:50	45.5	45.5	2,570	3:38	45.5	45.5	2,720	4:08	61.8	61.8	4,122	4:08	87.8	87.8	6,022
Early evening	18:00	21:30	5:00	38.5	38.5	2,125	5:00	38.5	38.5	2,125	5:00	38.5	38.5	2,125	5:00	63.0	63.0	4,167	5:00	80.5	80.5	5,862
Late evening	21:30	23:00	8:00	10.5	10.5	569	8:00	10.5	10.5	569	8:00	10.5	10.5	569	8:00	18.0	18.0	1,116	8:00	22.5	22.5	1,570
Night	23:00	2:00	8:00	21.0	21.0	1,139	8:00	21.0	21.0	1,139	8:00	21.0	21.0	1,139	8:00	36.0	36.0	2,232	8:00	45.0	45.0	3,140
Saturday																						
Daytime	6:00	19:00	5:00	147.6	147.6	4,073	5:00	147.6	147.6	4,073	5:00	147.6	147.6	4,073	5:00	246.0	246.0	8,136	5:00	322.0	322.0	11,723
Evening	19:00	23:00	8:00	28.0	28.0	759	7:52	28.0	28.0	772	7:26	28.0	28.0	816	8:00	48.0	48.0	1,488	8:00	60.0	60.0	2,093
Night	23:00	2:00	8:00	21.0	21.0	569	8:00	21.0	21.0	569	8:00	21.0	21.0	569	8:00	36.0	36.0	1,116	8:00	45.0	45.0	1,570
Sunday																						
Daytime	8:00	19:00	5:00	125.6	125.6	3,466	5:00	125.6	125.6	3,466	5:00	125.6	125.6	3,466	5:00	210.0	210.0	6,945	5:00	276.0	276.0	10,048
Evening	19:00	23:00	10:00	24.0	24.0	607	10:00	24.0	24.0	607	10:00	24.0	24.0	607	10:00	40.0	40.0	1,191	10:00	48.0	48.0	1,675

Notes:

- Initial Service Level 3a reflects early opening of Confederation Line East; Service Levels 4-9 reflect full Stage 2 build out
- Service Plan 3a-9 reflects OC Transpo service configuration for Stage 2 (Peak periods 3 of 4 trains to Trim, 1 of 4 to Blair; Off-peak all to Trim)
- Service Plan 1-9 reflects OC Transpo policy headways used as basis for Stage 1 Service Plan
- Service Plan 1-9 reflects RTG's proposal of single-car service on weekends from Stage 1

		Stage 2 Service Planning Summary																				
Calendar Year	2026-30				2031-35				2036-40				2041-46				2047-48					
Service Level	5				6				7				8				9					
System	Stage 2				Stage 2				Stage 2				Stage 2				Stage 2					
Summary Totals																						
Minimum Service Capacity - AM Peak (pphd)		12,000				13,091				14,400				14,400				14,400				
Peak Vehicles in Service		74				80				88				88				88				
Total Fleet Size		84				90				100				100				100				
Annual Revenue Train Hours		171,259				181,614				191,386				191,386				191,386				
Aggregate Annual Driver Hours Target		171,259				181,614				191,386				191,386				191,386				
Annual Revenue Vehicle Kilometres		10,730,000				11,310,000				12,060,000				12,060,000				12,060,000				
Time periods	Start	End	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km	Head-way	Rev Train Hours	Driver Hours	Rev Veh Km
Monday-Thursday																						
Early morning	5:00	6:30	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687
Morning peak	6:30	9:00	3:00	92.5	92.5	6,391	2:45	100.0	100.0	6,972	2:30	110.0	110.0	7,669	2:30	110.0	110.0	7,669	2:30	110.0	110.0	7,669
Midday	9:00	14:45	4:11	155.3	155.3	11,507	3:50	178.3	178.3	12,553	3:29	189.8	189.8	13,808	3:29	189.8	189.8	13,808	3:29	189.8	189.8	13,808
Afternoon peak	14:45	18:00	3:38	97.5	97.5	6,858	3:20	107.3	107.3	7,482	3:02	117.0	117.0	8,230	3:02	117.0	117.0	8,230	3:02	117.0	117.0	8,230
Early evening	18:00	21:30	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862
Late evening	21:30	23:00	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570
Night	23:00	1:00	15:00	20.0	20.0	1,260	15:00	20.0	20.0	1,260	15:00	20.0	20.0	1,260	15:00	20.0	20.0	1,260	15:00	20.0	20.0	1,260
Friday																						
Early morning	5:00	6:30	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687	8:00	38.5	38.5	2,687
Morning peak	6:30	9:00	3:00	92.5	92.5	6,391	2:45	100.0	100.0	6,972	2:30	110.0	110.0	7,669	2:30	110.0	110.0	7,669	2:30	110.0	110.0	7,669
Midday	9:00	14:45	4:11	155.3	155.3	11,507	3:50	178.3	178.3	12,553	3:29	189.8	189.8	13,808	3:29	189.8	189.8	13,808	3:29	189.8	189.8	13,808
Afternoon peak	14:45	18:00	3:38	97.5	97.5	6,858	3:20	107.3	107.3	7,482	3:02	117.0	117.0	8,230	3:02	117.0	117.0	8,230	3:02	117.0	117.0	8,230
Early evening	18:00	21:30	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862	5:00	80.5	80.5	5,862
Late evening	21:30	23:00	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570	8:00	22.5	22.5	1,570
Night	23:00	2:00	8:00	45.0	45.0	3,140	8:00	45.0	45.0	3,140	8:00	45.0	45.0	3,140	8:00	45.0	45.0	3,140	8:00	45.0	45.0	3,140
Saturday																						
Daytime	6:00	19:00	5:00	322.0	322.0	11,723	5:00	322.0	322.0	11,723	4:34	349.8	349.8	12,838	4:34	349.8	349.8	12,838	4:34	349.8	349.8	12,838
Evening	19:00	23:00	7:27	64.0	64.0	2,248	6:50	68.0	68.0	2,452	6:12	76.0	76.0	2,698	6:12	76.0	76.0	2,698	6:12	76.0	76.0	2,698
Night	23:00	2:00	8:00	45.0	45.0	1,570	8:00	45.0	45.0	1,570	8:00	45.0	45.0	1,570	8:00	45.0	45.0	1,570	8:00	45.0	45.0	1,570
Sunday																						
Daytime	8:00	19:00	5:00	276.0	276.0	10,048	5:00	276.0	276.0	10,048	5:00	276.0	276.0	10,048	5:00	276.0	276.0	10,048	5:00	276.0	276.0	10,048
Evening	19:00	23:00	10:00	48.0	48.0	1,675	10:00	48.0	48.0	1,675	10:00	48.0	48.0	1,675	10:00	48.0	48.0	1,675	10:00	48.0	48.0	1,675

Notes:

- Initial Service Level 3a reflects early opening of Confederation Line East; Service Levels 4-9 reflect full Stage 2 build out
- Service Plan 3a-9 reflects OC Transpo service configuration for Stage 2 (Peak periods 3 of 4 trains to Trim, 1 of 4 to Blair; Off-peak all to Trim)
- Service Plan 1-9 reflects OC Transpo policy headways used as basis for Stage 1 Service Plan
- Service Plan 1-9 reflects RTG's proposal of single-car service on weekends from Stage 1

**Preliminary Service Plan / Operations Matters
Worksheet - Service Level 1 - 2018**

Parameters provided by RTG for Stage 1 (Also see cars per train by period, below)		
Seats per car		120
Standing room per car (square metres)		54.1
EB Peak terminal to terminal run time - start to stop (minutes)		22.17
WB Peak terminal to terminal run time - start to stop (minutes)		22.2833
Calculated	Peak service capacity per car (limited to min. seated requirement)	300
	Off-peak service capacity per car	163
	Two-way run time without terminal time (minutes)	44.4533

**This tab was brought over from the final Stage 1 Interactive Spreadsheet.
Links to other tabs have been replaced with hard inputs or links to R7-R10.**

Length of Alignment (km)	12.65
Minimum Terminal Time at each terminal	3.00 or headway, whichever is less
Terminal time below which step-back operation required	3.00
Drivers per train - "0" for driverless, "1" otherwise	1

Service design by time period

Capacity and service level calculations

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)	Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Headway (m:ss)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,351	2	326	4.1	8.00	44.453	3.00	50.45	7	14	56.00	5.77	56.00	8.00	8:00
	201	Morning peak	6:30	9:00	2.5	5.00	10,700	2	600	17.8	3.36	44.453	3.00	50.45	15	30	50.47	3.01	50.47	3.36	3:22
	201	Midday	9:00	14:45	5.75	5.00	4,168	2	326	12.8	4.69	44.453	3.00	50.45	11	22	51.62	3.58	51.62	4.69	4:42
	201	Afternoon peak	14:45	18:00	3.25	5.00	8,833	2	600	14.7	4.08	44.453	3.00	50.45	13	26	52.99	4.27	52.99	4.08	4:05
	201	Early evening	18:00	21:30	3.5	5.00	2,156	2	326	6.6	5.00	44.453	3.00	50.45	11	22	55.00	5.27	55.00	5.00	5:00
	201	Late evening	21:30	23:00	1.5	8.00	1,377	2	326	4.2	8.00	44.453	3.00	50.45	7	14	56.00	5.77	56.00	8.00	8:00
	201	Night	23:00	1:00	2	15.00	300	2	326	0.9	15.00	44.453	3.00	50.45	4	8	60.00	7.77	60.00	15.00	15:00
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,351	2	326	4.1	8.00	44.453	3.00	50.45	7	14	56.00	5.77	56.00	8.00	8:00
	51	Morning peak	6:30	9:00	2.5	5.00	10,700	2	600	17.8	3.36	44.453	3.00	50.45	15	30	50.47	3.01	50.47	3.36	3:22
	51	Midday	9:00	14:45	5.75	5.00	4,168	2	326	12.8	4.69	44.453	3.00	50.45	11	22	51.62	3.58	51.62	4.69	4:42
	51	Afternoon peak	14:45	18:00	3.25	5.00	8,833	2	600	14.7	4.08	44.453	3.00	50.45	13	26	52.99	4.27	52.99	4.08	4:05
	51	Early evening	18:00	21:30	3.5	5.00	2,156	2	326	6.6	5.00	44.453	3.00	50.45	11	22	55.00	5.27	55.00	5.00	5:00
	51	Late evening	21:30	23:00	1.5	8.00	1,377	2	326	4.2	8.00	44.453	3.00	50.45	7	14	56.00	5.77	56.00	8.00	8:00
	51	Night	23:00	2:00	3	8.00	713	2	326	2.2	8.00	44.453	3.00	50.45	7	14	56.00	5.77	56.00	8.00	8:00
Saturday (see note)	53	Daytime	6:00	19:00	13	5.00	1,593	1	163	9.8	5.00	44.453	3.00	50.45	11	11	55.00	5.27	55.00	5.00	5:00
	53	Evening	19:00	23:00	4	8.00	1,171	1	163	7.2	8.00	44.453	3.00	50.45	7	7	56.00	5.77	56.00	8.00	8:00
	53	Night	23:00	2:00	3	8.00	713	1	163	4.4	8.00	44.453	3.00	50.45	7	7	56.00	5.77	56.00	8.00	8:00
Sunday (see note)	60	Daytime	8:00	19:00	11	5.00	1,254	1	163	7.7	5.00	44.453	3.00	50.45	11	11	55.00	5.27	55.00	5.00	5:00
	60	Evening	19:00	23:00	4	10.00	701	1	163	4.3	10.00	44.453	3.00	50.45	6	6	60.00	7.77	60.00	10.00	10:00

Notes:

* One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation

- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday

Operations Matters and Service Quantities

Step-back needed at terminals?	Drivers on duty	Hours of drivers' work per day	Hours of drivers' work per year	Number of One-Way Trips *	Rev Train Hours per day	Annual Rev Train Hours	Rev Train Km per day	Annual Rev Train Km	Rev Veh Km per day	Annual Rev Veh Km
-	7	13.3	2,673	28.5 *	13.3	2,673	361	72,466	721	144,931
-	15	37.5	7,538	89.2	37.5	7,538	1,128	226,720	2,256	453,439
-	11	63.3	12,713	147.0	63.3	12,713	1,860	373,861	3,720	747,721
-	13	42.3	8,492	95.7	42.3	8,492	1,210	243,298	2,421	486,596
-	11	38.5	7,739	84.0	38.5	7,739	1,063	213,583	2,125	427,165
-	7	10.5	2,111	22.5	10.5	2,111	285	57,210	569	114,419
-	4	8.0	1,608	16.0	8.0	1,608	202	40,682	405	81,365
-	7	13.3	678	28.5 *	13.3	678	361	18,387	721	36,774
-	15	37.5	1,913	89.2	37.5	1,913	1,128	57,526	2,256	115,052
-	11	63.3	3,226	147.0	63.3	3,226	1,860	94,860	3,720	189,720
-	13	42.3	2,155	95.7	42.3	2,155	1,210	61,732	2,421	123,465
-	11	38.5	1,964	84.0	38.5	1,964	1,063	54,193	2,125	108,385
-	7	10.5	536	22.5	10.5	536	285	14,516	569	29,032
-	7	21.0	1,071	45.0	21.0	1,071	569	29,032	1,139	58,063
-	11	147.6	7,822	322.0 *	147.6	7,822	4,073	215,885	4,073	215,885
-	7	28.0	1,484	60.0	28.0	1,484	759	40,227	759	40,227
-	7	21.0	1,113	45.0	21.0	1,113	569	30,170	569	30,170
-	11	125.6	7,535	274.0 *	125.6	7,535	3,466	207,966	3,466	207,966
-	6	24.0	1,440	48.0	24.0	1,440	607	36,432	607	36,432
Annual Total			73,809	165,118		73,809		2,088,744		3,646,807

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 2 - 2020

Parameters provided by RTG for Stage 1	
(Also see cars per train by period, below)	Seats per car
	Standing room per car (square metres)
	EB Peak terminal to terminal run time - start to stop (minutes)
	WB Peak terminal to terminal run time - start to stop (minutes)
Calculated	Peak service capacity per car (limited to min. seated requirement)
	Off-peak service capacity per car
	Two-way run time without terminal time (minutes)

This tab was brought over from the final Stage 1 Interactive Spreadsheet.
Links to other tabs have been replaced with hard inputs or links to R7-R10.

Length of Alignment (km)	12.65	
Minimum Terminal Time at each terminal	3.00	or headway, whichever is less
Terminal time below which step-back operation required	3.00	
Drivers per train - "0" for driverless, "1" otherwise	1	

Service design by time period

Capacity and service level calculations

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)	Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Headway (m:ss)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,435	2	326	4.4	8.00	44.63	3.00	50.63	7	14	56.00	5.69	56.00	8.00	8:00
	201	Morning peak	6:30	9:00	2.5	5.00	11,360	2	600	18.9	3.17	44.63	3.00	50.63	16	32	50.70	3.04	50.70	3.17	3:10
	201	Midday	9:00	14:45	5.75	5.00	4,425	2	326	13.6	4.42	44.63	3.00	50.63	12	24	53.04	4.21	53.04	4.42	4:25
	201	Afternoon peak	14:45	18:00	3.25	5.00	9,377	2	600	15.6	3.84	44.63	3.00	50.63	14	28	53.75	4.56	53.75	3.84	3:50
	201	Early evening	18:00	21:30	3.5	5.00	2,288	2	326	7.0	5.00	44.63	3.00	50.63	11	22	55.00	5.19	55.00	5.00	5:00
	201	Late evening	21:30	23:00	1.5	8.00	1,462	2	326	4.5	8.00	44.63	3.00	50.63	7	14	56.00	5.69	56.00	8.00	8:00
	201	Night	23:00	1:00	2	15.00	319	2	326	1.0	15.00	44.63	3.00	50.63	4	8	60.00	7.69	60.00	15.00	15:00
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,435	2	326	4.4	8.00	44.63	3.00	50.63	7	14	56.00	5.69	56.00	8.00	8:00
	51	Morning peak	6:30	9:00	2.5	5.00	11,360	2	600	18.9	3.17	44.63	3.00	50.63	16	32	50.70	3.04	50.70	3.17	3:10
	51	Midday	9:00	14:45	5.75	5.00	4,425	2	326	13.6	4.42	44.63	3.00	50.63	12	24	53.04	4.21	53.04	4.42	4:25
	51	Afternoon peak	14:45	18:00	3.25	5.00	9,377	2	600	15.6	3.84	44.63	3.00	50.63	14	28	53.75	4.56	53.75	3.84	3:50
	51	Early evening	18:00	21:30	3.5	5.00	2,288	2	326	7.0	5.00	44.63	3.00	50.63	11	22	55.00	5.19	55.00	5.00	5:00
	51	Late evening	21:30	23:00	1.5	8.00	1,462	2	326	4.5	8.00	44.63	3.00	50.63	7	14	56.00	5.69	56.00	8.00	8:00
	51	Night	23:00	2:00	3	8.00	757	2	326	2.3	8.00	44.63	3.00	50.63	7	14	56.00	5.69	56.00	8.00	8:00
Saturday (see note)	53	Daytime	6:00	19:00	13	5.00	1,691	1	163	10.4	5.00	44.63	3.00	50.63	11	11	55.00	5.19	55.00	5.00	5:00
	53	Evening	19:00	23:00	4	8.00	1,243	1	163	7.6	7.87	44.63	3.00	50.63	7	7	55.08	5.23	55.08	7.87	7:52
	53	Night	23:00	2:00	3	8.00	757	1	163	4.6	8.00	44.63	3.00	50.63	7	7	56.00	5.69	56.00	8.00	8:00
Sunday (see note)	60	Daytime	8:00	19:00	11	5.00	1,331	1	163	8.2	5.00	44.63	3.00	50.63	11	11	55.00	5.19	55.00	5.00	5:00
	60	Evening	19:00	23:00	4	10.00	744	1	163	4.6	10.00	44.63	3.00	50.63	6	6	60.00	7.69	60.00	10.00	10:00

Notes:

* One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation

- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday

Operations Matters and Service Quantities

Step-back needed at terminals?	Drivers on duty	Hours of drivers' work per day	Hours of drivers' work per year	Number of One-Way Trips *	Rev Train Hours per day	Annual Rev Train Hours	Rev Train Km per day	Annual Rev Train Km	Rev Veh Km per day	Annual Rev Veh Km
-	7	13.3	2,673	28.5 *	13.3	2,673	361	72,466	721	144,931
-	16	40.0	8,040	94.7	40.0	8,040	1,198	240,704	2,395	481,408
-	12	69.0	13,869	156.1	69.0	13,869	1,975	396,921	3,949	793,842
-	14	45.5	9,146	101.6	45.5	9,146	1,285	258,305	2,570	516,610
-	11	38.5	7,739	84.0	38.5	7,739	1,063	213,583	2,125	427,165
-	7	10.5	2,111	22.5	10.5	2,111	285	57,210	569	114,419
-	4	8.0	1,608	16.0	8.0	1,608	202	40,682	405	81,365
-	7	13.3	678	28.5 *	13.3	678	361	18,387	721	36,774
-	16	40.0	2,040	94.7	40.0	2,040	1,198	61,074	2,395	122,148
-	12	69.0	3,519	156.1	69.0	3,519	1,975	100,711	3,949	201,423
-	14	45.5	2,321	101.6	45.5	2,321	1,285	65,540	2,570	131,080
-	11	38.5	1,964	84.0	38.5	1,964	1,063	54,193	2,125	108,385
-	7	10.5	536	22.5	10.5	536	285	14,516	569	29,032
-	7	21.0	1,071	45.0	21.0	1,071	569	29,032	1,139	58,063
-	11	147.6	7,822	322.0 *	147.6	7,822	4,073	215,885	4,073	215,885
-	7	28.0	1,484	61.0	28.0	1,484	772	40,896	772	40,896
-	7	21.0	1,113	45.0	21.0	1,113	569	30,170	569	30,170
-	11	125.6	7,535	274.0 *	125.6	7,535	3,466	207,966	3,466	207,966
-	6	24.0	1,440	48.0	24.0	1,440	607	36,432	607	36,432
Annual Total			76,707	170,330		76,707		2,154,672		3,777,995

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 3 - 2022

Parameters provided by RTG for Stage 1	
(Also see cars per train by period, below)	Seats per car
	Standing room per car (square metres)
	EB Peak terminal to terminal run time - start to stop (minutes)
	WB Peak terminal to terminal run time - start to stop (minutes)
Calculated	Peak service capacity per car (limited to min. seated requirement)
	Off-peak service capacity per car
	Two-way run time without terminal time (minutes)

This tab was brought over from the final Stage 1 Interactive Spreadsheet.
 Links to other tabs have been replaced with hard inputs or links to R7-R10.

Length of Alignment (km)	12.65	
Minimum Terminal Time at each terminal	3.00	or headway, whichever is less
Terminal time below which step-back operation required	3.00	
Drivers per train - "0" for driverless, "1" otherwise	1	

Service design by time period

Capacity and service level calculations

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)	Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Head-way (m:ss)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.0	1,518	2	326	4.7	8.000	44.68	3.00	50.68	7	14	56.00	5.66	56.00	8.000	8:00
	201	Morning peak	6:30	9:00	2.5	5.0	12,020	2	600	20.0	2.995	44.68	3.00	50.67	17	34	50.92	3.12	50.92	2.995	3:00
	201	Midday	9:00	14:45	5.75	5.0	4,682	2	326	14.4	4.177	44.68	3.00	50.68	13	26	54.31	4.81	54.31	4.177	4:11
	201	Afternoon peak	14:45	18:00	3.25	5.0	9,922	2	600	16.5	3.628	44.68	3.00	50.68	14	28	50.79	3.06	50.79	3.628	3:38
	201	Early evening	18:00	21:30	3.5	5.0	2,421	2	326	7.4	5.000	44.68	3.00	50.68	11	22	55.00	5.16	55.00	5.000	5:00
	201	Late evening	21:30	23:00	1.5	8.0	1,547	2	326	4.7	8.000	44.68	3.00	50.68	7	14	56.00	5.66	56.00	8.000	8:00
	201	Night	23:00	1:00	2	15.0	337	2	326	1.0	15.000	44.68	3.00	50.68	4	8	60.00	7.66	60.00	15.000	15:00
Friday	51	Early morning	5:00	6:30	1.5	8.0	1,518	2	326	4.7	8.000	44.68	3.00	50.68	7	14	56.00	5.66	56.00	8.000	8:00
	51	Morning peak	6:30	9:00	2.5	5.0	12,020	2	600	20.0	2.995	44.68	3.00	50.67	17	34	50.92	3.12	50.92	2.995	3:00
	51	Midday	9:00	14:45	5.75	5.0	4,682	2	326	14.4	4.177	44.68	3.00	50.68	13	26	54.31	4.81	54.31	4.177	4:11
	51	Afternoon peak	14:45	18:00	3.25	5.0	9,922	2	600	16.5	3.628	44.68	3.00	50.68	14	28	50.79	3.06	50.79	3.628	3:38
	51	Early evening	18:00	21:30	3.5	5.0	2,421	2	326	7.4	5.000	44.68	3.00	50.68	11	22	55.00	5.16	55.00	5.000	5:00
	51	Late evening	21:30	23:00	1.5	8.0	1,547	2	326	4.7	8.000	44.68	3.00	50.68	7	14	56.00	5.66	56.00	8.000	8:00
	51	Night	23:00	2:00	3	8.0	802	2	326	2.5	8.000	44.68	3.00	50.68	7	14	56.00	5.66	56.00	8.000	8:00
Saturday (see note)	53	Daytime	6:00	19:00	13	5.0	1,789	1	163	11.0	5.000	44.68	3.00	50.68	11	11	55.00	5.16	55.00	5.000	5:00
	53	Evening	19:00	23:00	4	8.0	1,315	1	163	8.1	7.437	44.68	3.00	50.68	7	7	52.06	3.69	52.06	7.437	7:26
	53	Night	23:00	2:00	3	8.0	802	1	163	4.9	8.000	44.68	3.00	50.68	7	7	56.00	5.66	56.00	8.000	8:00
Sunday (see note)	60	Daytime	8:00	19:00	11	5.0	1,408	1	163	8.6	5.000	44.68	3.00	50.68	11	11	55.00	5.16	55.00	5.000	5:00
	60	Evening	19:00	23:00	4	10.0	787	1	163	4.8	10.000	44.68	3.00	50.68	6	6	60.00	7.66	60.00	10.000	10:00

- Notes:**
- * One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
 - Does not include Monday-Friday summer and other seasonal service reductions
 - Saturday level of service also operated on Boxing Day
 - Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
 - Does not include extra service scheduled on Canada Day
 - Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday

Operations Matters and Service Quantities

Step-back needed at terminals?	Drivers on duty	Hours of drivers' work per day	Hours of drivers' work per year	Number of One-Way Trips *	Rev Train Hours per day	Annual Rev Train Hours	Rev Train Km per day	Annual Rev Train Km	Rev Veh Km per day	Annual Rev Veh Km
-	7	13.3	2,673	28.5 *	13.3	2,673	361	72,466	721	144,931
-	17	42.5	8,543	100.2	42.5	8,543	1,267	254,689	2,534	509,378
-	13	74.8	15,025	165.2	74.8	15,025	2,089	419,982	4,179	839,963
-	14	45.5	9,146	107.5	45.5	9,146	1,360	273,312	2,720	546,624
-	11	38.5	7,739	84.0	38.5	7,739	1,063	213,583	2,125	427,165
-	7	10.5	2,111	22.5	10.5	2,111	285	57,210	569	114,419
-	4	8.0	1,608	16.0	8.0	1,608	202	40,682	405	81,365
-	7	13.3	678	28.5 *	13.3	678	361	18,387	721	36,774
-	17	42.5	2,168	100.2	42.5	2,168	1,267	64,623	2,534	129,245
-	13	74.8	3,812	165.2	74.8	3,812	2,089	106,563	4,179	213,125
-	14	45.5	2,321	107.5	45.5	2,321	1,360	69,348	2,720	138,696
-	11	38.5	1,964	84.0	38.5	1,964	1,063	54,193	2,125	108,385
-	7	10.5	536	22.5	10.5	536	285	14,516	569	29,032
-	7	21.0	1,071	45.0	21.0	1,071	569	29,032	1,139	58,063
-	11	147.6	7,822	322.0 *	147.6	7,822	4,073	215,885	4,073	215,885
-	7	28.0	1,484	64.5	28.0	1,484	816	43,272	816	43,272
-	7	21.0	1,113	45.0	21.0	1,113	569	30,170	569	30,170
-	11	125.6	7,535	274.0 *	125.6	7,535	3,466	207,966	3,466	207,966
-	6	24.0	1,440	48.0	24.0	1,440	607	36,432	607	36,432
Annual Total			78,786	175,676		78,786		2,222,307		3,910,890

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 3a - 2023

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information		Seats per car	120
(Also see cars per train by period, below)		Standing room per car (square metres)	54.1
Calculated		Peak service capacity per car (limited to min. seated requirement)	300
		Off-peak service capacity per car	163

Service Plan 3a reflects early opening of Confederation Line East on 1/1/2023

Run Time and Distance inputs are hard-coded, based on information on the Run Times tab and latest alignment information

Service Plan 3a capacity targets based on Service Plan 4 targets

Minimum Terminal Time at each terminal 3.00 or headway, whichever is less

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
A	Tunney's	Blair Pocket	50.6	13.067	2.5	5.00	10537
B	Tunney's	Trim	74.6	24.804	2.5		
C	Tunney's	Trim	74.6	24.804	2.5		
D	Tunney's	Trim	74.6	24.804	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	17.6	3.42	3:25

Tunney's Pasture (SL 3a Confed East ONLY) to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
13.67	50.6	3.00	56.60	5	10	68.3	8.9	68.3	13.67	22.0	12.5	287	574
13.67	74.6	3.00	80.60	6	12	82.0	3.7	82.0	13.67	22.0	15.0	544	1,089

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
A	Tunney's	Blair Pocket	50.6	13.067	3.25	5.00	8698
B	Tunney's	Trim	74.6	24.804	3.25		
C	Tunney's	Trim	74.6	24.804	3.25		
D	Tunney's	Trim	74.6	24.804	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	14.5	4.14	4:08

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.56	50.6	3.00	56.60	4	8	66.2	7.8	66.2	16.56	23.6	13.0	308	616
16.56	74.6	3.00	80.60	5	10	82.8	4.1	82.8	16.56	23.6	16.3	584	1,169

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,331
	201	Morning peak	6:30	9:00	2.5	5.00	10,537
	201	Midday	9:00	14:45	5.75	5.00	4,105
	201	Afternoon peak	14:45	18:00	3.25	5.00	8,698
	201	Early evening	18:00	21:30	3.5	5.00	2,123
	201	Late evening	21:30	23:00	1.5	8.00	1,356
	201	Night	23:00	1:00	2	15.00	296
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,331
	51	Morning peak	6:30	9:00	2.5	5.00	10,537
	51	Midday	9:00	14:45	5.75	5.00	4,105
	51	Afternoon peak	14:45	18:00	3.25	5.00	8,698
	51	Early evening	18:00	21:30	3.5	5.00	2,123
	51	Late evening	21:30	23:00	1.5	8.00	1,356
	51	Night	23:00	2:00	3	8.00	703
Saturday	53	Daytime	6:00	19:00	13	5.00	1,568
	53	Evening	19:00	23:00	4	8.00	1,153
	53	Night	23:00	2:00	3	8.00	703
Sunday	60	Daytime	8:00	19:00	11	5.00	1,235
	60	Evening	19:00	23:00	4	10.00	690

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	4.1	8.00	8:00
2	600	17.6	3.42	3:25
2	326	12.6	4.77	4:46
2	600	14.5	4.14	4:08
2	326	6.5	5.00	5:00
2	326	4.2	8.00	8:00
2	326	0.9	15.00	15:00
2	326	4.1	8.00	8:00
2	600	17.6	3.42	3:25
2	326	12.6	4.77	4:46
2	600	14.5	4.14	4:08
2	326	6.5	5.00	5:00
2	326	4.2	8.00	8:00
2	326	2.2	8.00	8:00
1	163	9.6	5.00	5:00
1	163	7.1	8.00	8:00
1	163	4.3	8.00	8:00
1	163	7.6	5.00	5:00
1	163	4.2	10.00	10:00

Tunney's Pasture (SL 3a Confed East ONLY) to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	17.3 *	13.8	428	856
9.53	74.6	3.00	80.60	9	18	85.8	5.6	85.8	6.83	43.9	27.5	831	1,663
9.53	74.6	3.00	80.60	9	18	85.8	5.6	85.8	9.53	72.4	51.8	1,796	3,592
10.00	74.6	3.00	80.60	9	18	90.0	7.7	90.0	8.28	47.1	29.3	892	1,784
10.00	74.6	3.00	80.60	9	18	90.0	7.7	90.0	10.00	42.0	31.5	1,042	2,084
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	11.3	9.0	279	558
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	22.5	18.0	558	1,116
10.00	74.6	3.00	80.60	9	9	90.0	7.7	90.0	10.00	164.0 *	123.0	4,068	4,068
16.00	74.6	3.00	80.60	6	6	96.0	10.7	96.0	16.00	30.0	24.0	744	744
16.00	74.6	3.00	80.60	6	6	96.0	10.7	96.0	16.00	22.5	18.0	558	558
10.00	74.6	3.00	80.60	9	9	90.0	7.7	90.0	10.00	140.0 *	105.0	3,473	3,473
20.00	74.6	3.00	80.60	5	5	100.0	12.7	100.0	20.00	24.0	20.0	595	595

Annual Total 83,017 59,395 1,924,549 3,320,414

- Notes:**
- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
 - Does not include Monday-Friday summer and other seasonal service reductions
 - Saturday level of service also operated on Boxing Day
 - Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
 - Does not include extra service scheduled on Canada Day
 - Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday

Tunney's Pasture (SL 3a Confed East ONLY) to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.83	74.6	3.00	80.60	12	24	82.0	3.7	82.0	6.83	43.9	30.0	1,089	2,178

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
8.28	74.6	3.00	80.60	10	20	82.8	4.1	82.8	8.28	47.1	32.5	1,169	2,337

Stage 1 KM
12.65

Tunney's Pasture (SL 3a Confed East ONLY) to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	17.3 *	13.8	428	856
				12.0	24.0				6.83	43.9	30.0	1,089	2,178
9.53	74.6	3.00	80.60	9	18	85.8	5.6	85.8	9.53	72.4	51.8	1,796	3,592
				10.0	20.0				8.28	47.1	32.5	1,169	2,337
10.00	74.6	3.00	80.60	9	18	90.0	7.7	90.0	10.00	42.0	31.5	1,042	2,084
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	11.3	9.0	279	558
30.00	74.6	3.00	80.60	3	6	90.0	7.7	90.0	30.00	8.0	6.0	198	397
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	17.3 *	13.8	428	856
				12.0	24.0				6.83	43.9	30.0	1,089	2,178
9.53	74.6	3.00	80.60	9	18	85.8	5.6	85.8	9.53	72.4	51.8	1,796	3,592
				10.0	20.0				8.28	47.1	32.5	1,169	2,337
10.00	74.6	3.00	80.60	9	18	90.0	7.7	90.0	10.00	42.0	31.5	1,042	2,084
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	11.3	9.0	279	558
16.00	74.6	3.00	80.60	6	12	96.0	10.7	96.0	16.00	22.5	18.0	558	1,116
10.00	74.6	3.00	80.60	9	9	90.0	7.7	90.0	10.00	164.0 *	123.0	4,068	4,068
16.00	74.6	3.00	80.60	6	6	96.0	10.7	96.0	16.00	30.0	24.0	744	744
16.00	74.6	3.00	80.60	6	6	96.0	10.7	96.0	16.00	22.5	18.0	558	558
10.00	74.6	3.00	80.60	9	9	90.0	7.7	90.0	10.00	140.0 *	105.0	3,473	3,473
20.00	74.6	3.00	80.60	5	5	100.0	12.7	100.0	20.00	24.0	20.0	595	595

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins
34.5	12	24	24	0
87.8	23	46	22	0
144.8	18	36	0	10
94.2	19	38	2	0
84.0	18	36	0	2
22.5	12	24	0	12
16.0	6	12	0	12
				12
34.5	12	24	24	0
87.8	23	46	22	0
144.8	18	36	0	10
94.2	19	38	2	0
84.0	18	36	0	2
22.5	12	24	0	12
45.0	12	24	0	0
				24
328.0	18	18	18	0
60.0	12	12	0	6
45.0	12	12	0	0
				12
280.0	18	18	18	0
48.0	10	10	0	8
				10

Stage 1
Ann Rev Veh KM

Stage 2
Ann Rev Veh KM

Annual Total 83,017 60,844 2,059,154 3,589,622 166,034

3,661,403 3,248,633
Total ARVK: 6,910,036

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 4 - 2024

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement)	300
	Off-peak service capacity per car	163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	10537
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	17.6	3.42	3:25

Moodie to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
13.67	85.6	7.5	15	8.5	102.5	13.67	22.0	18.8	543	1,086
13.67	109.7	8.5	17	3.2	116.2	13.67	22.0	21.3	801	1,601

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	8698
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	14.5	4.14	4:08

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.56	85.6	3.00	91.56	6	12	99.3	6.9	99.3	16.56	23.6	19.5	583	1,165
16.56	109.7	3.00	115.72	7	14	115.9	3.1	115.9	16.56	23.6	22.8	859	1,718

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,331
	201	Morning peak	6:30	9:00	2.5	5.00	10,537
	201	Midday	9:00	14:45	5.75	5.00	4,105
	201	Afternoon peak	14:45	18:00	3.25	5.00	8,698
	201	Early evening	18:00	21:30	3.5	5.00	2,123
	201	Late evening	21:30	23:00	1.5	8.00	1,356
	201	Night	23:00	1:00	2	15.00	296
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,331
	51	Morning peak	6:30	9:00	2.5	5.00	10,537
	51	Midday	9:00	14:45	5.75	5.00	4,105
	51	Afternoon peak	14:45	18:00	3.25	5.00	8,698
	51	Early evening	18:00	21:30	3.5	5.00	2,123
	51	Late evening	21:30	23:00	1.5	8.00	1,356
	51	Night	23:00	2:00	3	8.00	703
Saturday	53	Daytime	6:00	19:00	13	5.00	1,568
	53	Evening	19:00	23:00	4	8.00	1,153
	53	Night	23:00	2:00	3	8.00	703
Sunday	60	Daytime	8:00	19:00	11	5.00	1,235
	60	Evening	19:00	23:00	4	10.00	690

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	4.1	8.00	8:00
2	600	17.6	3.42	3:25
2	326	12.6	4.77	4:46
2	600	14.5	4.14	4:08
2	326	6.5	5.00	5:00
2	326	4.2	8.00	8:00
2	326	0.9	15.00	15:00
2	326	4.1	8.00	8:00
2	600	17.6	3.42	3:25
2	326	12.6	4.77	4:46
2	600	14.5	4.14	4:08
2	326	6.5	5.00	5:00
2	326	4.2	8.00	8:00
2	326	2.2	8.00	8:00
1	163	9.6	5.00	5:00
1	163	7.1	8.00	8:00
1	163	4.3	8.00	8:00
1	163	7.6	5.00	5:00
1	163	4.2	10.00	10:00

Moodie to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				16.0	32.0		6.83	43.9	40.0	1,343	2,687		
9.53	109.7	3.00	115.72	13	26	123.9	7.1	123.9	9.53	72.4	74.8	2,640	5,281
				13.0	26.0		8.28	47.1	42.3	1,442	2,883		
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15.00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				16.0	32.0		6.83	43.9	40.0	1,343	2,687		
9.53	109.7	3.00	115.72	13	26	123.9	7.1	123.9	9.53	72.4	74.8	2,640	5,281
				13.0	26.0		8.28	47.1	42.3	1,442	2,883		
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	168.0 *	168.0	6,127	6,127
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	30.0	32.0	1,094	1,094
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20.00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total **85,581** **82,326** **2,888,670** **4,983,515**

Notes:

- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
- Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.83	102.21	16	32	3.6	109.3	6.83	43.9	40.0	1,462	2,925

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
8.28	102.2	3.00	108.21	14	28	115.9	6.8	115.9	8.28	47.1	45.5	1,569	3,139

Stage 1 KM
12.65

Baseline to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				16.0	32.0				6.83	43.9	40.0	1,462	2,925
9.53	102.2	3.00	108.21	12	24	114.4	6.1	114.4	9.53	72.4	69.0	2,412	4,823
				14.0	28.0				8.28	47.1	45.5	1,569	3,139
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				16.0	32.0				6.83	43.9	40.0	1,462	2,925
9.53	102.2	3.00	108.21	12	24	114.4	6.1	114.4	9.53	72.4	69.0	2,412	4,823
				14.0	28.0				8.28	47.1	45.5	1,569	3,139
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	168.0 *	154.0	5,596	5,596
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	30.0	28.0	999	999
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins
38.5	15	30	30	0
87.8	32	64	34	0
144.8	25	50	0	14
94.2	27	54	4	0
84.0	23	46	0	8
22.5	15	30	0	16
32.0	10	20	0	10
38.5	15	30	30	0
87.8	32	64	34	0
144.8	25	50	0	14
94.2	27	54	4	0
84.0	23	46	0	8
22.5	15	30	0	16
45.0	15	30	0	0
				30
336.0	23	23	23	0
60.0	15	15	0	8
45.0	15	15	0	0
				15
288.0	23	23	23	0
48.0	12	12	0	11

Stage 1 Ann Rev Veh KM
Stage 2 Ann Rev Veh KM

974.1	1,712.5
2221.6	3,390.3
3663.3	6,440.5
2384.0	3,638.2
2125.2	3,736.3
569.3	1,000.8
809.6	449.9
974.1	1,712.5
2221.6	3,390.3
3663.3	6,440.5
2384.0	3,638.2
2125.2	3,736.3
569.3	1,000.8
1138.5	2,001.6
4250.4	7,472.6
759.0	1,334.4
569.2	1,000.8
3643.2	6,405.1
607.2	1,067.5

Annual Total 85,581 80,216 2,850,703 4,976,364 171,162

3,779,706 6,180,173
Total ARVK: 9,959,879

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 5 - 2026

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement)	300
	Off-peak service capacity per car	163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	12000
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	20.0	3.00	3:00

Moodie to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
12.00	85.6	8	16	5.2	96.0	12.00	25.0	20.0	618	1,237
12.00	109.7	10	20	5.1	120.0	12.00	25.0	25.0	912	1,824

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	9906
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	16.5	3.63	3:38

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
14.54	85.6	3.00	91.56	7	14	101.8	8.1	101.8	14.54	26.8	22.8	663	1,327
14.54	109.7	3.00	115.72	8	16	116.3	3.3	116.3	14.54	26.8	26.0	978	1,957

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,515
	201	Morning peak	6:30	9:00	2.5	5.00	12,000
	201	Midday	9:00	14:45	5.75	5.00	4,675
	201	Afternoon peak	14:45	18:00	3.25	5.00	9,906
	201	Early evening	18:00	21:30	3.5	5.00	2,417
	201	Late evening	21:30	23:00	1.5	8.00	1,545
	201	Night	23:00	1:00	2	15.00	337
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,515
	51	Morning peak	6:30	9:00	2.5	5.00	12,000
	51	Midday	9:00	14:45	5.75	5.00	4,675
	51	Afternoon peak	14:45	18:00	3.25	5.00	9,906
	51	Early evening	18:00	21:30	3.5	5.00	2,417
	51	Late evening	21:30	23:00	1.5	8.00	1,545
	51	Night	23:00	2:00	3	8.00	800
Saturday	53	Daytime	6:00	19:00	13	5.00	1,786
	53	Evening	19:00	23:00	4	8.00	1,313
	53	Night	23:00	2:00	3	8.00	800
Sunday	60	Daytime	8:00	19:00	11	5.00	1,406
	60	Evening	19:00	23:00	4	10.00	786

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	4.6	8.00	8:00
2	600	20.0	3.00	3:00
2	326	14.3	4.18	4:11
2	600	16.5	3.63	3:38
2	326	7.4	5.00	5:00
2	326	4.7	8.00	8:00
2	326	1.0	15.00	15:00
2	326	4.6	8.00	8:00
2	600	20.0	3.00	3:00
2	326	14.3	4.18	4:11
2	600	16.5	3.63	3:38
2	326	7.4	5.00	5:00
2	326	4.7	8.00	8:00
2	326	2.5	8.00	8:00
1	163	11.0	5.00	5:00
1	163	8.1	7.45	7:27
1	163	4.9	8.00	8:00
1	163	8.6	5.00	5:00
1	163	4.8	10.00	10:00

Moodie to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
8.37	109.7	3.00	115.72	14	28	117.2	3.7	117.2	6.00	50.0	45.0	1,530	3,060
8.37	109.7	3.00	115.72	14	28	117.2	3.7	117.2	8.37	82.4	80.5	3,007	6,014
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	7.27	53.7	48.8	1,642	3,284
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15.00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
8.37	109.7	3.00	115.72	14	28	117.2	3.7	117.2	6.00	50.0	45.0	1,530	3,060
8.37	109.7	3.00	115.72	14	28	117.2	3.7	117.2	8.37	82.4	80.5	3,007	6,014
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	7.27	53.7	48.8	1,642	3,284
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	168.0 *	168.0	6,127	6,127
14.90	109.7	3.00	115.72	8	8	119.2	4.7	119.2	14.90	32.2	32.0	1,175	1,175
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20.00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total **91,416** **86,673** **3,082,787** **5,367,464**

Notes:

- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
- Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.00	102.21	19	38	5.9	114.0	6.00	50.0	47.5	1,666	3,331

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
7.27	102.2	3.00	108.21	15	30	109.0	3.4	109.0	7.27	53.7	48.8	1,787	3,575

Stage 1 KM
12.65

Baseline to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				19.0	38.0				6.00	50.0	47.5	1,666	3,331
8.37	102.2	3.00	108.21	13	26	108.8	3.3	108.8	8.37	82.4	74.8	2,746	5,493
				15.0	30.0				7.27	53.7	48.8	1,787	3,575
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				19.0	38.0				6.00	50.0	47.5	1,666	3,331
8.37	102.2	3.00	108.21	13	26	108.8	3.3	108.8	8.37	82.4	74.8	2,746	5,493
				15.0	30.0				7.27	53.7	48.8	1,787	3,575
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	168.0 *	154.0	5,596	5,596
14.90	102.2	3.00	108.21	8	8	119.2	8.5	119.2	14.90	32.2	32.0	1,073	1,073
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins
38.5 *	15	30	30	0
100.0 *	37	74	44	0
164.9 *	27	54	0	20
107.3 *	30	60	6	0
84.0 *	23	46	0	14
22.5 *	15	30	0	16
32.0 *	10	20	0	10
38.5 *	15	30	30	0
100.0 *	37	74	44	0
164.9 *	27	54	0	20
107.3 *	30	60	6	0
84.0 *	23	46	0	14
22.5 *	15	30	0	16
45.0 *	15	30	0	0
336.0 *	23	23	23	0
64.4 *	16	16	0	7
45.0 *	15	15	0	1
288.0 *	23	23	23	0
48.0 *	12	12	0	11

Stage 1 Ann Rev Veh KM
Stage 2 Ann Rev Veh KM

974.1	1,712.5
2530.0	3,861.0
4172.0	7,334.7
2715.0	4,143.3
2125.2	3,736.3
569.3	1,000.8
809.6	449.9
974.1	1,712.5
2530.0	3,861.0
4172.0	7,334.7
2715.0	4,143.3
2125.2	3,736.3
569.3	1,000.8
1138.5	2,001.6
4250.4	7,472.6
815.1	1,433.0
569.2	1,000.8
3643.2	6,405.1
607.2	1,067.5

Annual Total 91,416 84,586 3,045,075 5,361,193 182,832

4,071,996 6,656,662
Total ARVK: 10,728,658

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 6 - 2031

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement)	300
	Off-peak service capacity per car	163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	13091
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	21.8	2.75	2:45

Moodie to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
11.00	85.6	9	18	6.7	99.0	11.00	27.3	22.5	674	1,349
11.00	109.7	11	22	5.6	121.0	11.00	27.3	27.5	995	1,989

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	10806
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	18.0	3.33	3:20

Moodie to Trim

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
13.33	85.6	3.00	91.56	7	14	93.3	3.9	93.3	13.33	29.3	22.8	724	1,448
13.33	109.7	3.00	115.72	9	18	119.9	5.1	119.9	13.33	29.3	29.3	1,067	2,135

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,653
	201	Morning peak	6:30	9:00	2.5	5.00	13,091
	201	Midday	9:00	14:45	5.75	5.00	5,100
	201	Afternoon peak	14:45	18:00	3.25	5.00	10,806
	201	Early evening	18:00	21:30	3.5	5.00	2,637
	201	Late evening	21:30	23:00	1.5	8.00	1,685
	201	Night	23:00	1:00	2	15.00	367
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,653
	51	Morning peak	6:30	9:00	2.5	5.00	13,091
	51	Midday	9:00	14:45	5.75	5.00	5,100
	51	Afternoon peak	14:45	18:00	3.25	5.00	10,806
	51	Early evening	18:00	21:30	3.5	5.00	2,637
	51	Late evening	21:30	23:00	1.5	8.00	1,685
	51	Night	23:00	2:00	3	8.00	873
Saturday	53	Daytime	6:00	19:00	13	5.00	1,948
	53	Evening	19:00	23:00	4	8.00	1,432
	53	Night	23:00	2:00	3	8.00	873
Sunday	60	Daytime	8:00	19:00	11	5.00	1,534
	60	Evening	19:00	23:00	4	10.00	857

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	5.1	8.00	8:00
2	600	21.8	2.75	2:45
2	326	15.6	3.84	3:50
2	600	18.0	3.33	3:20
2	326	8.1	5.00	5:00
2	326	5.2	8.00	8:00
2	326	1.1	15.00	15:00
2	326	5.1	8.00	8:00
2	600	21.8	2.75	2:45
2	326	15.6	3.84	3:50
2	600	18.0	3.33	3:20
2	326	8.1	5.00	5:00
2	326	5.2	8.00	8:00
2	326	2.7	8.00	8:00
1	163	12.0	5.00	5:00
1	163	8.8	6.83	6:50
1	163	5.4	8.00	8:00
1	163	9.4	5.00	5:00
1	163	5.3	10.00	10:00

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				20.0	40.0				5.50	54.5	50.0	1,669	3,338
7.67	109.7	3.00	115.72	16	32	122.7	6.5	122.7	7.67	89.9	92.0	3,280	6,561
				16.0	32.0				6.66	58.5	52.0	1,791	3,582
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15.00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				20.0	40.0				5.50	54.5	50.0	1,669	3,338
7.67	109.7	3.00	115.72	16	32	122.7	6.5	122.7	7.67	89.9	92.0	3,280	6,561
				16.0	32.0				6.66	58.5	52.0	1,791	3,582
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	168.0 *	168.0	6,127	6,127
13.66	109.7	3.00	115.72	9	9	122.9	6.6	122.9	13.66	35.1	36.0	1,282	1,282
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20.00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total **95,835** **91,862** **3,230,012** **5,656,252**

Notes:

- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
- Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
5.50	102.21	20	40	3.9	110.0	5.50	54.5	50.0	1,817	3,634

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.66	102.2	3.00	108.21	17	34	113.3	5.5	113.3	6.66	58.5	55.3	1,950	3,900

Stage 1 KM
12.65

Baseline to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				20.0	40.0				5.50	54.5	50.0	1,817	3,634
7.67	102.2	3.00	108.21	15	30	115.1	6.4	115.1	7.67	89.9	86.3	2,996	5,992
				17.0	34.0				6.66	58.5	55.3	1,950	3,900
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				20.0	40.0				5.50	54.5	50.0	1,817	3,634
7.67	102.2	3.00	108.21	15	30	115.1	6.4	115.1	7.67	89.9	86.3	2,996	5,992
				17.0	34.0				6.66	58.5	55.3	1,950	3,900
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	168.0 *	154.0	5,596	5,596
13.66	102.2	3.00	108.21	8	8	109.3	3.5	109.3	13.66	35.1	32.0	1,171	1,171
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins	Stage 1 Ann Rev Veh KM	Stage 2 Ann Rev Veh KM
38.5 *	15	30	30	0	974.1	1,712.5
109.1 *	40.0	80	50	0	2760.0	4,212.0
179.9 *	31	62	0	18	4551.3	8,001.6
117.1 *	33	66	4	0	2961.8	4,520.0
84.0 *	23	46	0	20	2125.2	3,736.3
22.5 *	15	30	0	16	569.3	1,000.8
32.0 *	10	20	0	10	809.6	449.9
38.5 *	15	30	30	0	974.1	1,712.5
109.1 *	40	80	50	0	2760.0	4,212.0
179.9 *	31	62	0	18	4551.3	8,001.6
117.1 *	33	66	4	0	2961.8	4,520.0
84.0 *	23	46	0	20	2125.2	3,736.3
22.5 *	15	30	0	16	569.3	1,000.8
45.0 *	15	30	0	0	1138.5	2,001.6
336.0 *	23	23	23	0	4250.4	7,472.6
70.3 *	17	17	0	6	889.2	1,563.3
45.0 *	15	15	0	2	569.2	1,000.8
288.0 *	23	23	23	0	3643.2	6,405.1
48.0 *	12	12	0	11	607.2	1,067.5

Annual Total 95,835 89,752 3,192,275 5,650,424 191,671

4,291,676 7,015,000
Total ARVK: 11,306,676

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 7 - 2036

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement) 300
	Off-peak service capacity per car 163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	14400
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	24.0	2.50	2:30

Moodie to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
10.00	85.6	10	20	7.2	100.0	10.00	30.0	25.0	742	1,484
10.00	109.7	12	24	5.1	120.0	10.00	30.0	30.0	1,094	2,188

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	11887
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	19.8	3.03	3:02

Moodie to Trim

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
12.11	85.6	3.00	91.56	8	16	96.9	5.7	96.9	12.11	32.2	26.0	796	1,592
12.11	109.7	3.00	115.72	10	20	121.1	5.7	121.1	12.11	32.2	32.5	1,174	2,348

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphpd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,819
	201	Morning peak	6:30	9:00	2.5	5.00	14,400
	201	Midday	9:00	14:45	5.75	5.00	5,609
	201	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	201	Early evening	18:00	21:30	3.5	5.00	2,901
	201	Late evening	21:30	23:00	1.5	8.00	1,854
	201	Night	23:00	1:00	2	15.00	404
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,819
	51	Morning peak	6:30	9:00	2.5	5.00	14,400
	51	Midday	9:00	14:45	5.75	5.00	5,609
	51	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	51	Early evening	18:00	21:30	3.5	5.00	2,901
	51	Late evening	21:30	23:00	1.5	8.00	1,854
	51	Night	23:00	2:00	3	8.00	960
Saturday	53	Daytime	6:00	19:00	13	5.00	2,143
	53	Evening	19:00	23:00	4	8.00	1,575
	53	Night	23:00	2:00	3	8.00	960
Sunday	60	Daytime	8:00	19:00	11	5.00	1,687
	60	Evening	19:00	23:00	4	10.00	943

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	5.6	8.00	8:00
2	600	24.0	2.50	2:30
2	326	17.2	3.49	3:29
2	600	19.8	3.03	3:02
2	326	8.9	5.00	5:00
2	326	5.7	8.00	8:00
2	326	1.2	15.00	15:00
2	326	5.6	8.00	8:00
2	600	24.0	2.50	2:30
2	326	17.2	3.49	3:29
2	600	19.8	3.03	3:02
2	326	8.9	5.00	5:00
2	326	5.7	8.00	8:00
2	326	2.9	8.00	8:00
1	163	13.1	4.56	4:34
1	163	9.7	6.21	6:12
1	163	5.9	8.00	8:00
1	163	10.4	5.00	5:00
1	163	5.8	10.00	10:00

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
6.97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	60.0	55.0	1,836	3,672
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	64.4	58.5	1,970	3,941
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15.00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
6.97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	60.0	55.0	1,836	3,672
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	64.4	58.5	1,970	3,941
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
9.13	109.7	3.00	115.72	13	13	118.6	4.5	118.6	9.13	184.9 *	182.8	6,745	6,745
12.42	109.7	3.00	115.72	10	10	124.2	7.2	124.2	12.42	38.7	40.0	1,410	1,410
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20.00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total 102,035 97,208 3,439,385 6,035,475

Notes:

- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
- Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
5.00	102.21	22	44	3.9	110.0	5.00	60.0	55.0	1,999	3,997

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.06	102.2	3.00	108.21	18	36	109.0	3.4	109.0	6.06	64.4	58.5	2,145	4,289

Stage 1 KM
12.65

Baseline to Trim

Combined Service

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day	Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins	Stage 1 Ann Rev Veh KM	Stage 2 Ann Rev Veh KM
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282	38.5 *	15	30	30	0	974.1	1,712.5
				22.0	44.0				5.00	60.0	55.0	1,999	3,997	120.0 *	44.0	88	58	0	3036.0	4,633.2
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591	197.9 *	33	66	0	22	5006.4	8,801.7
				18.0	36.0				6.06	64.4	58.5	2,145	4,289	128.8 *	36	72	6	0	3258.0	4,972.0
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798	84.0 *	23	46	0	26	2125.2	3,736.3
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749	22.5 *	15	30	0	16	569.3	1,000.8
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066	32.0 *	10	20	0	10	809.6	449.9
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282	38.5 *	15	30	30	0	974.1	1,712.5
				22.0	44.0				5.00	60.0	55.0	1,999	3,997	120.0 *	44.0	88	58	0	3036.0	4,633.2
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591	197.9 *	33	66	0	22	5006.4	8,801.7
				18.0	36.0				6.06	64.4	58.5	2,145	4,289	128.8 *	36	72	6	0	3258.0	4,972.0
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798	84.0 *	23	46	0	26	2125.2	3,736.3
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749	22.5 *	15	30	0	16	569.3	1,000.8
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499	45.0 *	15	30	0	0	1138.5	2,001.6
9.13	102.2	3.00	108.21	12	12	109.5	3.7	109.5	9.13	182.9 *	167.0	6,094	6,094	367.9 *	25	25	25	0	4653.5	8,184.5
12.42	102.2	3.00	108.21	9	9	111.7	4.8	111.7	12.42	38.7	36.0	1,288	1,288	77.3 *	19	19	0	6	978.1	1,719.6
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749	45.0 *	15	15	0	4	569.2	1,000.8
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797	288.0 *	23	23	23	0	3643.2	6,405.1
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799	48.0 *	12	12	0	11	607.2	1,067.5

Annual Total 101,929 94,178 3,395,253 6,023,811 203,964

4,576,616 7,482,670
Total ARVK: 12,059,287

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 8 - 2041

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement)	300
	Off-peak service capacity per car	163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	14400
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations					
Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)	
2.0	600	24.0	2.50	2:30	

Moodie to Blair/Trim													
AM PEAK - Service Quantities are totaled in main service plan below													
Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day			
10:00	85.6	10	20	7.2	100.0	10.00	30.0	25.0	742	1,484			
10:00	109.7	12	24	5.1	120.0	10.00	30.0	30.0	1,094	2,188			

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

Peak Period Service Information							
PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	11887
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations					
Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)	
2.0	600	19.8	3.03	3:02	

PM PEAK - Service Quantities are totaled in main service plan below													
Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
12:11	85.6	3.00	91.56	8	16	96.9	5.7	96.9	12.11	32.2	26.0	796	1,592
12:11	109.7	3.00	115.72	10	20	121.1	5.7	121.1	12.11	32.2	32.5	1,174	2,348

Service design by time period							
Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,819
	201	Morning peak	6:30	9:00	2.5	5.00	14,400
	201	Midday	9:00	14:45	5.75	5.00	5,609
	201	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	201	Early evening	18:00	21:30	3.5	5.00	2,901
	201	Late evening	21:30	23:00	1.5	8.00	1,854
	201	Night	23:00	1:00	2	15.00	404
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,819
	51	Morning peak	6:30	9:00	2.5	5.00	14,400
	51	Midday	9:00	14:45	5.75	5.00	5,609
	51	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	51	Early evening	18:00	21:30	3.5	5.00	2,901
	51	Late evening	21:30	23:00	1.5	8.00	1,854
	51	Night	23:00	2:00	3	8.00	960
Saturday	53	Daytime	6:00	19:00	13	5.00	2,143
	53	Evening	19:00	23:00	4	8.00	1,575
	53	Night	23:00	2:00	3	8.00	960
Sunday	60	Daytime	8:00	19:00	11	5.00	1,687
	60	Evening	19:00	23:00	4	10.00	943

Capacity and service level calculations					
Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)	
2	326	5.6	8.00	8:00	
2	600	24.0	2.50	2:30	
2	326	17.2	3.49	3:29	
2	600	19.8	3.03	3:02	
2	326	8.9	5.00	5:00	
2	326	5.7	8.00	8:00	
2	326	1.2	15.00	15:00	
2	326	5.6	8.00	8:00	
2	600	24.0	2.50	2:30	
2	326	17.2	3.49	3:29	
2	600	19.8	3.03	3:02	
2	326	8.9	5.00	5:00	
2	326	5.7	8.00	8:00	
2	326	2.9	8.00	8:00	
1	163	13.1	4.56	4:34	
1	163	9.7	6.21	6:12	
1	163	5.9	8.00	8:00	
1	163	10.4	5.00	5:00	
1	163	5.8	10.00	10:00	

Moodie to Trim													
Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16:00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				22.0	44.0				5.00	60.0	55.0	1,836	3,672
6:97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	98.9	97.8	3,608	7,217
				18.0	36.0				6.06	64.4	58.5	1,970	3,941
10:00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16:00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15:00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16:00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				22.0	44.0				5.00	60.0	55.0	1,836	3,672
6:97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	98.9	97.8	3,608	7,217
				18.0	36.0				6.06	64.4	58.5	1,970	3,941
10:00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16:00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16:00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
9:13	109.7	3.00	115.72	13	13	118.6	4.5	118.6	9.13	184.9 *	182.8	6,745	6,745
12:42	109.7	3.00	115.72	10	10	124.2	7.2	124.2	12.42	38.7	40.0	1,410	1,410
16:00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10:00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20:00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total **102,035** **97,208** **3,439,385** **6,035,475**

- Notes:**
- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
 - Does not include Monday-Friday summer and other seasonal service reductions
 - Saturday level of service also operated on Boxing Day
 - Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
 - Does not include extra service scheduled on Canada Day
 - Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
 - Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
5.00	102.21	22	44	3.9	110.0	5.00	60.0	55.0	1,999	3,997

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.06	102.2	3.00	108.21	18	36	109.0	3.4	109.0	6.06	64.4	58.5	2,145	4,289

Stage 1 KM
12.65

Baseline to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				22.0	44.0				5.00	60.0	55.0	1,999	3,997
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591
				18.0	36.0				6.06	64.4	58.5	2,145	4,289
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				22.0	44.0				5.00	60.0	55.0	1,999	3,997
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591
				18.0	36.0				6.06	64.4	58.5	2,145	4,289
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499
9.13	102.2	3.00	108.21	12	12	109.5	3.7	109.5	9.13	182.9 *	167.0	6,094	6,094
12.42	102.2	3.00	108.21	9	9	111.7	4.8	111.7	12.42	38.7	36.0	1,288	1,288
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins
38.5 *	15	30	30	0
120.0 *	44	88	58	0
197.9 *	33	66	0	22
128.8 *	36	72	6	0
84.0 *	23	46	0	26
22.5 *	15	30	0	16
32.0 *	10	20	0	10
38.5 *	15	30	30	0
120.0 *	44	88	58	0
197.9 *	33	66	0	22
128.8 *	36	72	6	0
84.0 *	23	46	0	26
22.5 *	15	30	0	16
45.0 *	15	30	0	0
				30
367.9 *	25	25	25	0
77.3 *	19	19	0	6
45.0 *	15	15	0	4
				15
288.0 *	23	23	23	0
48.0 *	12	12	0	11

Stage 1 Ann Rev Veh KM
Stage 2 Ann Rev Veh KM

Annual Total 101,929 94,178 3,395,253 6,023,811 203,964

4,576,616 7,482,670
Total ARVK: 12,059,287

Preliminary Service Plan / Operations Matters
Worksheet - Service Level 9 - 2047

Note: Stage 2 Service Plan tabs have been adapted from the Stage 1 Interactive Spreadsheet, adding new Peak Period calculations to reflect the new service patterns.

Vehicle Information	
(Also see cars per train by period, below)	Seats per car 120
	Standing room per car (square metres) 54.1

Minimum Terminal Time at each terminal **3.00** or headway, whichever is less

Calculated	Peak service capacity per car (limited to min. seated requirement) 300
	Off-peak service capacity per car 163

Peak Period Service Information							
AM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	2.5	5.00	14400
B	Moodie	Trim	109.7	36.47	2.5		
C	Baseline	Trim	102.2	33.31	2.5		
D	Baseline	Trim	102.2	33.31	2.5		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	24.0	2.50	2:30

Moodie to Blair/Trim

AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
10.00	85.6	10	20	7.2	100.0	10.00	30.0	25.0	742	1,484
10.00	109.7	12	24	5.1	120.0	10.00	30.0	30.0	1,094	2,188

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK	Service Plans						
	From	To	Two-way Run Time	One-way Distance	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
A	Moodie	Blair Pocket	85.6	24.73	3.25	5.00	11887
B	Moodie	Trim	109.7	36.47	3.25		
C	Baseline	Trim	102.2	33.31	3.25		
D	Baseline	Trim	102.2	33.31	3.25		

Capacity and service level calculations

Cars per train	Capacity per train	Trips per hour required for capacity	Combined Headway (decimal) required (capacity or policy)	Headway (m:ss)
2.0	600	19.8	3.03	3:02

Moodie to Trim

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
12.11	85.6	3.00	91.56	8	16	96.9	5.7	96.9	12.11	32.2	26.0	796	1,592
12.11	109.7	3.00	115.72	10	20	121.1	5.7	121.1	12.11	32.2	32.5	1,174	2,348

Service design by time period

Day type	Days per year	Time periods	Start	End	Duration of period	Maximum Policy Headway (minutes)	Minimum Service Capacity (pphd)
Monday-Thursday	201	Early morning	5:00	6:30	1.5	8.00	1,819
	201	Morning peak	6:30	9:00	2.5	5.00	14,400
	201	Midday	9:00	14:45	5.75	5.00	5,609
	201	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	201	Early evening	18:00	21:30	3.5	5.00	2,901
	201	Late evening	21:30	23:00	1.5	8.00	1,854
	201	Night	23:00	1:00	2	15.00	404
Friday	51	Early morning	5:00	6:30	1.5	8.00	1,819
	51	Morning peak	6:30	9:00	2.5	5.00	14,400
	51	Midday	9:00	14:45	5.75	5.00	5,609
	51	Afternoon peak	14:45	18:00	3.25	5.00	11,887
	51	Early evening	18:00	21:30	3.5	5.00	2,901
	51	Late evening	21:30	23:00	1.5	8.00	1,854
	51	Night	23:00	2:00	3	8.00	960
Saturday	53	Daytime	6:00	19:00	13	5.00	2,143
	53	Evening	19:00	23:00	4	8.00	1,575
	53	Night	23:00	2:00	3	8.00	960
Sunday	60	Daytime	8:00	19:00	11	5.00	1,687
	60	Evening	19:00	23:00	4	10.00	943

Cars per train	Capacity per train	Trips per hour required for capacity	Headway (decimal) required (capacity or policy)	Headway (m:ss)
2	326	5.6	8.00	8:00
2	600	24.0	2.50	2:30
2	326	17.2	3.49	3:29
2	600	19.8	3.03	3:02
2	326	8.9	5.00	5:00
2	326	5.7	8.00	8:00
2	326	1.2	15.00	15:00
2	326	5.6	8.00	8:00
2	600	24.0	2.50	2:30
2	326	17.2	3.49	3:29
2	600	19.8	3.03	3:02
2	326	8.9	5.00	5:00
2	326	5.7	8.00	8:00
2	326	2.9	8.00	8:00
1	163	13.1	4.56	4:34
1	163	9.7	6.21	6:12
1	163	5.9	8.00	8:00
1	163	10.4	5.00	5:00
1	163	5.8	10.00	10:00

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				22.0	44.0				5.00	60.0	55.0	1,836	3,672
6.97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	98.9	97.8	3,608	7,217
				18.0	36.0				6.06	64.4	58.5	1,970	3,941
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
15.00	16.5	3.00	22.51	2	4	30.0	6.7	30.0	15.00	16.0	4.0	97	194
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	19.3 *	20.5	702	1,404
				22.0	44.0				5.00	60.0	55.0	1,836	3,672
6.97	109.7	3.00	115.72	17	34	118.6	4.4	118.6	6.97	98.9	97.8	3,608	7,217
				18.0	36.0				6.06	64.4	58.5	1,970	3,941
10.00	109.7	3.00	115.72	12	24	120.0	5.1	120.0	10.00	42.0	42.0	1,532	3,063
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	11.3	12.0	410	821
16.00	109.7	3.00	115.72	8	16	128.0	9.1	128.0	16.00	22.5	24.0	821	1,641
9.13	109.7	3.00	115.72	13	13	118.6	4.5	118.6	9.13	184.9 *	182.8	6,745	6,745
12.42	109.7	3.00	115.72	10	10	124.2	7.2	124.2	12.42	38.7	40.0	1,410	1,410
16.00	109.7	3.00	115.72	8	8	128.0	9.1	128.0	16.00	22.5	24.0	821	821
10.00	109.7	3.00	115.72	12	12	120.0	5.1	120.0	10.00	144.0 *	144.0	5,252	5,252
20.00	109.7	3.00	115.72	6	6	120.0	5.1	120.0	20.00	24.0	24.0	875	875

Annual Total **102,035** **97,208** **3,439,385** **6,035,475**

Notes:

- One-way trip counts for first period of day adjusted to include revenue service trips beginning prior to start of period to comply with requirements in PA Schedule 15-2, Part 1, 2.4 - Hours of Operation
- Does not include Monday-Friday summer and other seasonal service reductions
- Saturday level of service also operated on Boxing Day
- Sunday level of service also operated on New Year's, Good Friday, Victoria Day, Civic Holiday, Labour Day, Thanksgiving Day, and Christmas Day
- Does not include extra service scheduled on Canada Day
- Friday Early Morning through Early Evening train length and round trip time same as Monday-Thursday
- Night period service on Mon-Thurs consists of 15-minute service from Baseline to Trim and a 15-minute service shuttle from Moodie to Lincoln Fields

Baseline to Trim
AM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Trains required	Vehicles required	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
5.00	102.21	22	44	3.9	110.0	5.00	60.0	55.0	1,999	3,997

Hard Input for Trains required: AM Peak fleet calcs were developed separately to optimize terminal utilization among the 4 overlapping services.

PM PEAK - Service Quantities are totaled in main service plan below

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
6.06	102.2	3.00	108.21	18	36	109.0	3.4	109.0	6.06	64.4	58.5	2,145	4,289

Stage 1 KM
12.65

Baseline to Trim

Headway	Two-way Run Time	Min Terminal Time @ each terminal	Min Cycle Time	Trains required	Vehicles required	Avail. Cycle time	Adjusted Terminal Time @ each terminal	Adjusted Cycle Time	Headway (decimal) to be provided	Number of One-Way Trips *	Rev Train Hours per day	Rev Train Km per day	Rev Veh Km per day
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				22.0	44.0				5.00	60.0	55.0	1,999	3,997
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591
				18.0	36.0				6.06	64.4	58.5	2,145	4,289
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
15.00	102.2	3.00	108.21	8	16	120.0	8.9	120.0	15.00	16.0	16.0	533	1,066
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	19.3 *	18.0	641	1,282
				22.0	44.0				5.00	60.0	55.0	1,999	3,997
6.97	102.2	3.00	108.21	16	32	111.6	4.7	111.6	6.97	98.9	92.0	3,296	6,591
				18.0	36.0				6.06	64.4	58.5	2,145	4,289
10.00	102.2	3.00	108.21	11	22	110.0	3.9	110.0	10.00	42.0	38.5	1,399	2,798
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	11.3	10.5	375	749
16.00	102.2	3.00	108.21	7	14	112.0	4.9	112.0	16.00	22.5	21.0	749	1,499
9.13	102.2	3.00	108.21	12	12	109.5	3.7	109.5	9.13	182.9 *	167.0	6,094	6,094
12.42	102.2	3.00	108.21	9	9	111.7	4.8	111.7	12.42	38.7	36.0	1,288	1,288
16.00	102.2	3.00	108.21	7	7	112.0	4.9	112.0	16.00	22.5	21.0	749	749
10.00	102.2	3.00	108.21	11	11	110.0	3.9	110.0	10.00	144.0 *	132.0	4,797	4,797
20.00	102.2	3.00	108.21	6	6	120.0	8.9	120.0	20.00	24.0	24.0	799	799

Combined Service

Number of One-Way Trips *	Trains required	Vehicles required	Pull-Outs	Pull-Ins	Stage 1 Ann Rev Veh KM	Stage 2 Ann Rev Veh KM
38.5 *	15	30	30	0	974.1	1,712.5
120.0 *	44	88	58	0	3036.0	4,633.2
197.9 *	33	66	0	22	5006.4	8,801.7
128.8 *	36	72	6	0	3258.0	4,972.0
84.0 *	23	46	0	26	2125.2	3,736.3
22.5 *	15	30	0	16	569.3	1,000.8
32.0 *	10	20	0	10	809.6	449.9
				20		
38.5 *	15	30	30	0	974.1	1,712.5
120.0 *	44	88	58	0	3036.0	4,633.2
197.9 *	33	66	0	22	5006.4	8,801.7
128.8 *	36	72	6	0	3258.0	4,972.0
84.0 *	23	46	0	26	2125.2	3,736.3
22.5 *	15	30	0	16	569.3	1,000.8
45.0 *	15	30	0	0	1138.5	2,001.6
				30		
367.9 *	25	25	25	0	4653.5	8,184.5
77.3 *	19	19	0	6	978.1	1,719.6
45.0 *	15	15	0	4	569.2	1,000.8
				15		
288.0 *	23	23	23	0	3643.2	6,405.1
48.0 *	12	12	0	11	607.2	1,067.5
				12		

Annual Total 101,929 94,178 3,395,253 6,023,811 203,964

4,576,616 7,482,670
Total ARVK: 12,059,287