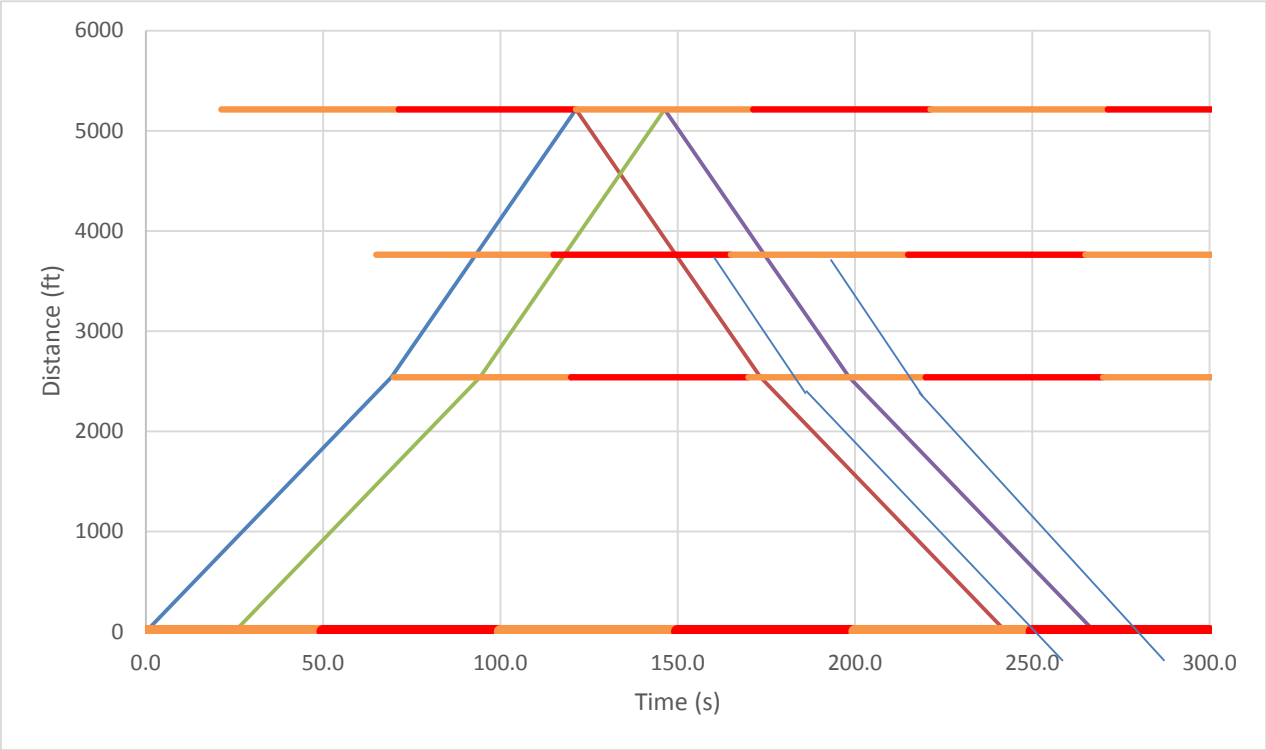
CE 474

Class 35

12 November 2015



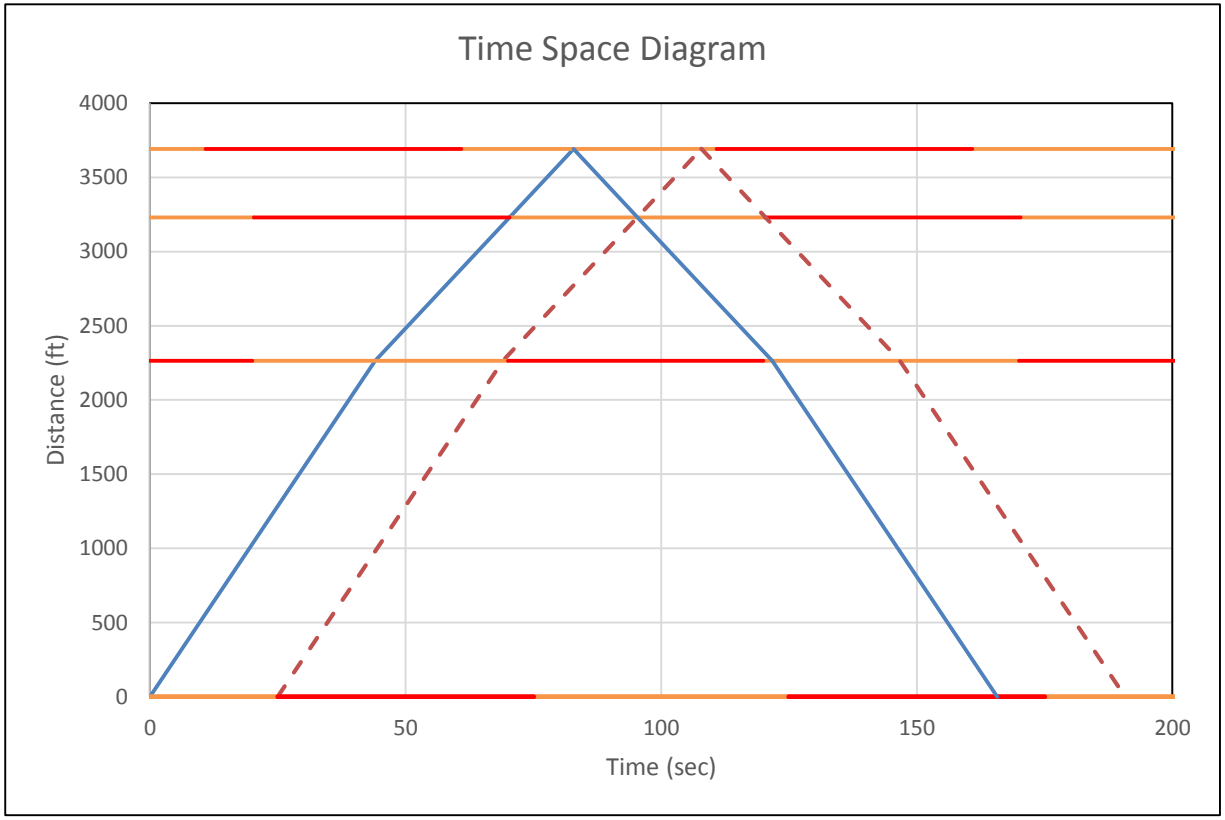
Offset Times:
U.S. 95 – 0s
White Avenue – 70s
South Blaine Street – 60s
South Mountain View Road – 21s

Quality of Progression:
Up Direction – Fantastic
Down Direction – Average

Bandwidth:
Up Direction – 25s
Down Direction – 28s
(after second intersection)

Goals:
To optimize the progression in the eastbound direction through the system of intersections, each on a 100 second cycle.
To maintain decent progression in the westbound direction, while making the eastbound progression most optimal.

Scheel, Kury



Case 1

Cycle length = 100 seconds

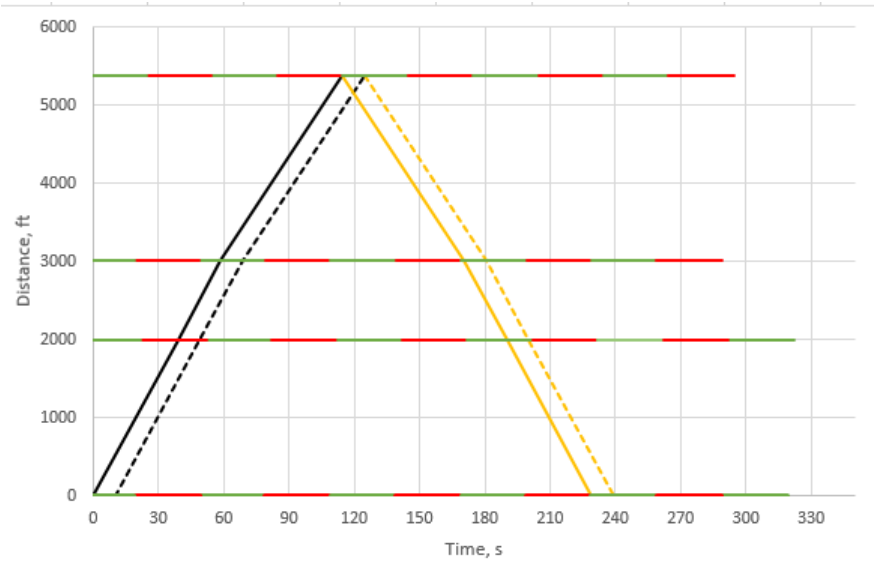
Platoon Width = 25 seconds

Larrea, Cupps

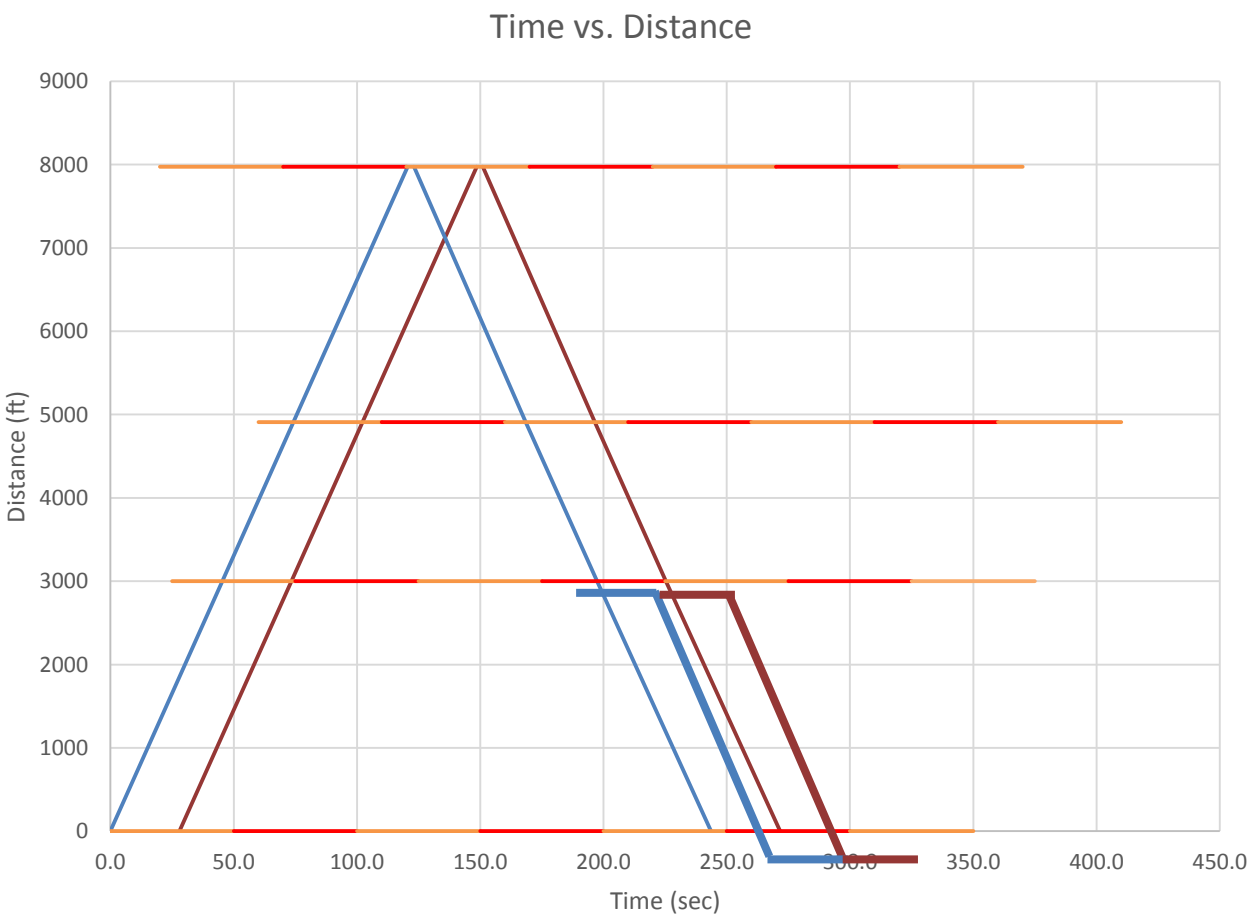
Activity C03: Signal Coordination Plan

Colten Bernauer
Allen Taylor-Stiffarm

- Network optimized for down direction preference to allow traffic flow leaving Moscow to alleviate traffic and congestion in the town.
- In order to compromise Peterson (2nd line) the offset was set to allow some green time for the tail end of the platoon in the upward direction, and allowed more green time in the beginning of the downward direction.
- Bandwidth of 10 seconds in the downward direction is able to be served completely.



Intersection	Distance	Cycle Length	Green (s)	Offset (s)	Platoon Width(s)	Speed (mi/hr)	Speed (ft/s)	Travel Time (s)
Farm			30	49				
	1997					35	51.3	38.9
Peterson			30	52				
	1015	60			10	35	51.3	19.8
Line			30	49				
	2376					29	42.5	55.9
Jackson			30	54.5				



Quality of progression

- Up = great
- Down = average

Bandwidth

- 28 sec

Goal

Our goal was to find the best offsets to provides steady flow throughout one direction.

We accomplished this by optimizing our bandwidth so we had a great up and an average down.

Cycle #	Seconds (from 5:06pm)		Green Interval Duration (sec)	Cycle Length (sec)	Numbers of vehicles arriving during…		Percent arrival	
	Green Time Start	Green Time End			Green	Red	Green	Red
1	0	53	53	97	9	0	100%	0%
2	97	161	64	101	6	2	75%	25%
3	198	266	68	106	10	2	83%	17%
4	304	371	67	118	6	2	75%	25%
5	422	477	55	93	11	4	73%	27%
6	515	575	60	112	8	4	67%	33%
7	627	680	53	91	6	1	86%	14%
8	718	791	73	116	6	7	46%	54%
9	834	896	62	100	4	0	100%	0%
10	934	995	61	86	9	0	100%	0%
11	1020	1079	59	105	7	2	78%	22%
12	1125	1180	55	93	8	3	73%	27%
13	1218	1280	62	88	9	2	82%	18%
14	1306	1360	54	95	5	1	83%	17%
15	1401	1457	56	95	4	1	80%	20%
16	1496	1549	53	83	5	0	100%	0%
17	1579	1627	48	95	7	2	78%	22%
18	1674	1726	52	95	6	1	86%	14%
19	1769	1830	61	104	5	0	100%	0%
20	1873	1924	51	-	4	0	100%	0%
		Average=	58	99		Average=	83%	17%
		Mean value of g/C=	0.59					

Number of arrivals on green = 6.89
Number of arrivals = 8.68
g/C = 0.60
P = .83
R_p = 1.39

12	**Class 33 (11.09)** Progression and coordination Do: AC03	**Class 34 (11.11)** Progression and coordination Continue: AC03 (due 11.12)	**Class 35 (11.12)** Build VISSIM network for system Review: AC02 Do: AC04 (due 11.16) Network 1 Network 2
13	**Class 36 (11.16)** Split times Critical movement analysis Do: AC05 (due	**Class 37 (11.18)** Continue: AC05 (due 11.19)	**Class 38 (11.19)** Do: AC06 (due 11.30)
14	**Class 39 (11.30)** Cycle length analysis Do: AC07 (due 12.07)	**Class 40 (12.02)** Exam #2	**Class 41 (12.03)** Offset analysis Do: AC08 (due 12.07)
15	**Class 42 (12.07)** Analyze data and prepare design	**Class 43 (12.09)** Analyze data and prepare design	**Class 44 (12.10)** Design project #2 presentation

AC03: Progression

AC04: Base network

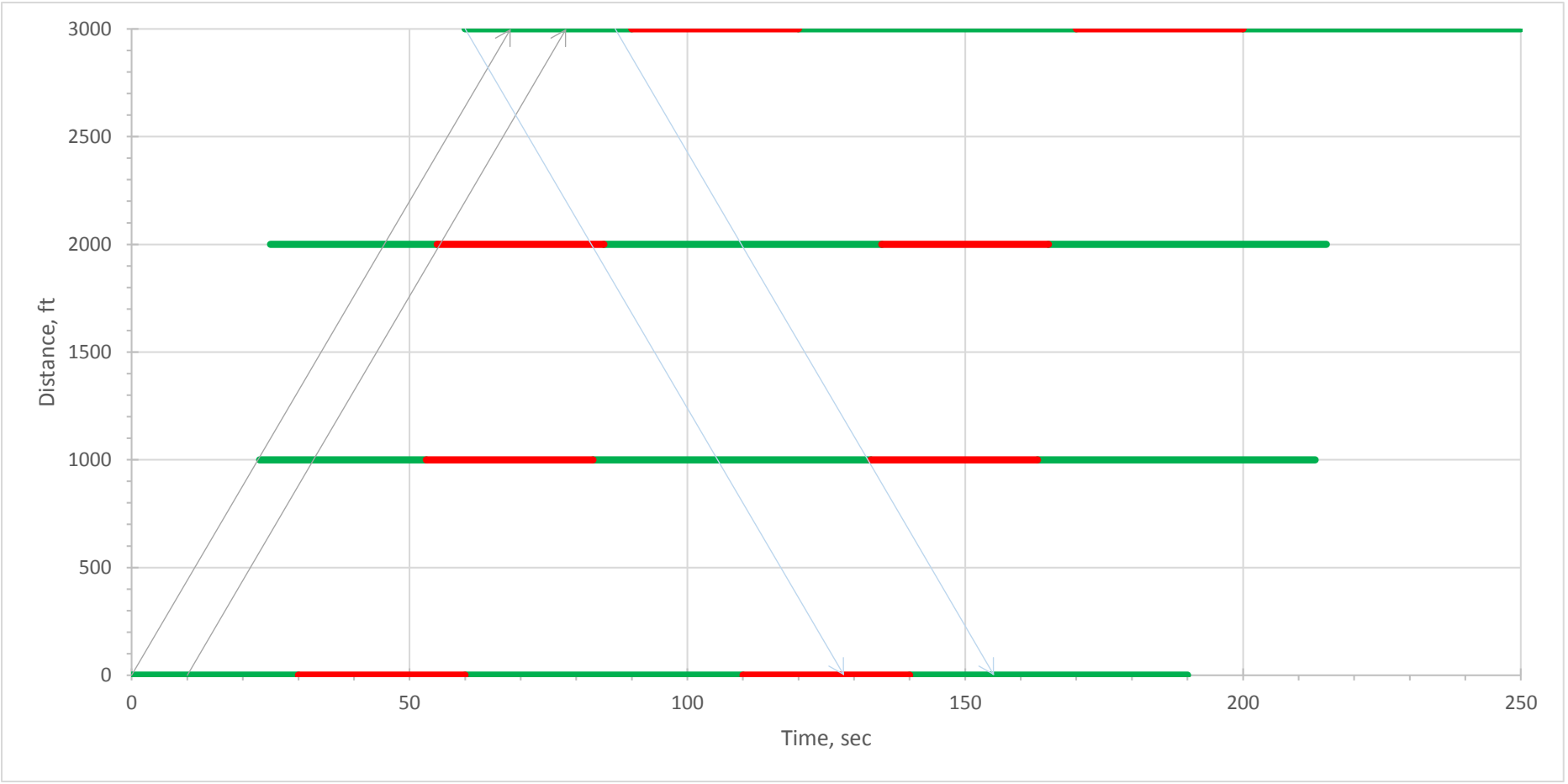
AC05: Critical movement analysis

AC06: Split analysis

AC07/AC08: Cycle and offset analysis

Synthesis and summary

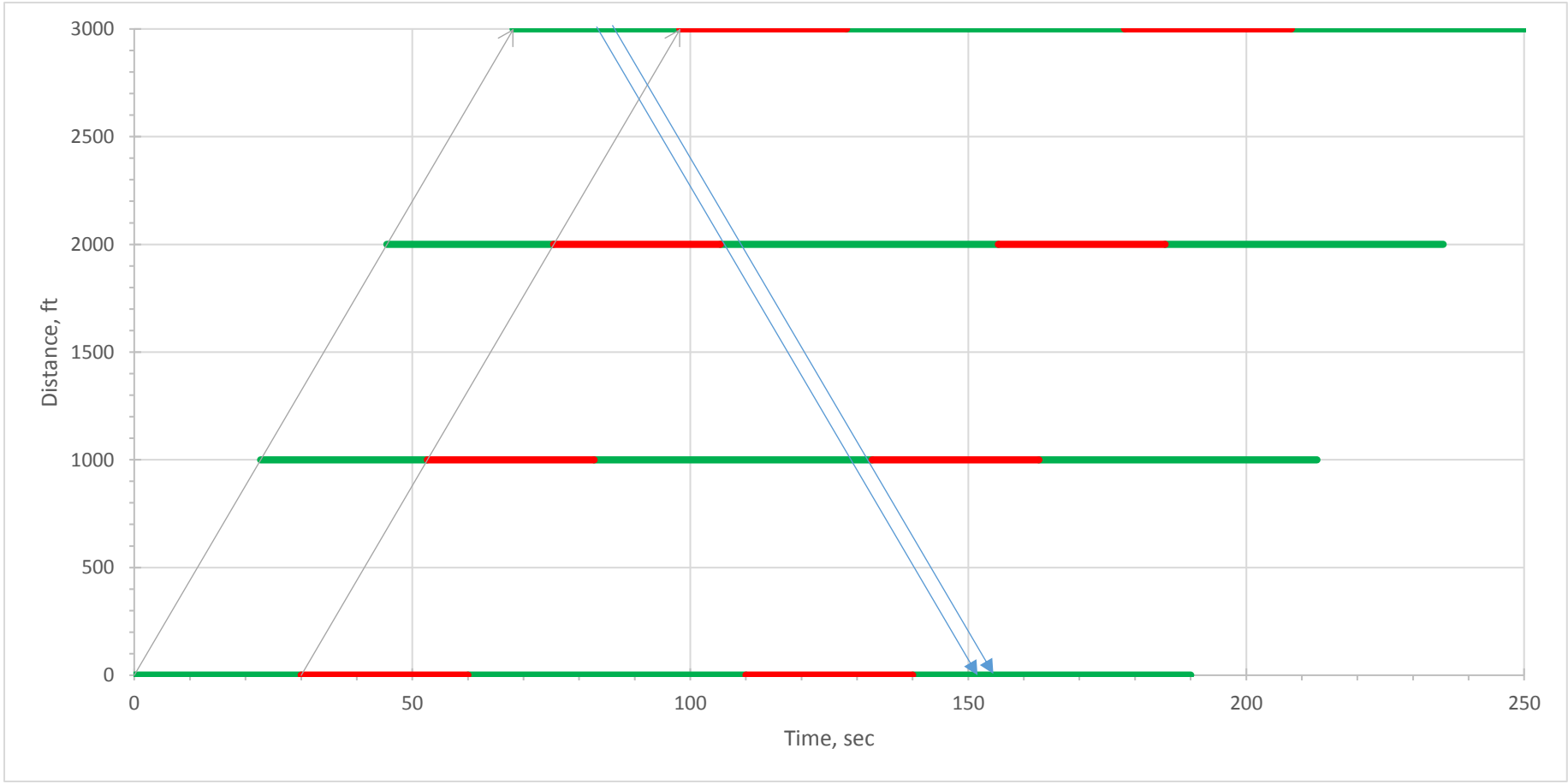
Activity	Work Tasks
AC02	**Field work** • Learn about parameters to describe quality of progression
AC01 AC03	**Spreadsheet tool** • Learn about options for coordination • Experiment with offsets and cycle length
AC04 AC05 AC06 AC07 AC08	**VISSIM microsimulation model** • Optimize phase splits, cycle length, and offsets • Predict travel times and delay



Quality of progression
- Up = Good
- Down = Average to poor

Bandwidth
- Up = 10 sec
- Down = 27 sec (partial)

What are your goals?
What can you accomplish?



Quality of progression
- Up = Excellent
- Down = Poor

Bandwidth
- Up = 40 sec
- Down = 5 sec

What are your goals?
What can you accomplish?