Intersection Program Timing Diagram

	Time in Seconds															
Function Name	**0**	**3**	**6**	**9**	**12**	**15**	**18**	**21**	**24**	**27**	**30**	**33**	**36**	**39**	**42**	**45**
trafficLights	a					b		c	d	e				f		g
crossWalkLights	a				b			c				d				e
turnLane							a								b	
crossWalkButtons	a/b															
ambientLight	a/b															

Function Name:	trafficLights
a	D goes green (if TurnLaneC == 1, C goes green); B and E are red.
b	D goes yellow. (If TurnLaneC == 1, C goes yellow);
c	D goes red. (If TurnLaneC == 1, C goes red) → [Set TurnLaneC = 0]; B goes green. (If TurnLaneA == 1, A goes green; else, E goes green)
d	If TurnLaneA == 1, A goes yellow.
e	If TurnLaneA == 1, A goes red and E goes green. [Set TurnLaneA = 0];
f	B and E go yellow.
g	B and E go red; D goes green (if TurnLaneC == 1, C goes green)

Function Name:	crossWalkLights
a	Set buttonsEW = 0; Set EW crosswalks to solid Stop. If buttonsNS == 1, set NS crosswalks to ‘Walk’ (1-6, 4-5).
b	If buttonsNS == 1, Blink NS Stop Indicator.
c	Set buttonsNS = 0; Set NS crosswalks to solid Stop. If buttonsEW == 1, set EW crosswalk indicators to walk (2-3)

d	If buttonsEW == 1, blink EW Stop Indicator.
e	Set buttonsEW = 0; Set EW crosswalks to solid Stop; If buttonsNS == 1, set NS crosswalks to ‘Walk’ (1-6, 4-5).

Function Name:	turnLane
a	If HallEffectSensor1 is triggered [digitalRead(ioPin) == 0], set TurnLaneA = 1;
b	If HallEffectSensor2 is triggered [digitalRead(ioPin) == 0], set TurnLaneC = 1;

Function Name:	crossWalkButtons
a	while true: if buttons 1, 6, 4, 5 pressed [digitalRead(ioPin) == 0], set buttonsNS = 1;
b	while true: if buttons 2, 3 pressed [digitalRead(ioPin) == 0], set buttonsEW = 1;

Function Name:	ambientLight
a	while true: if light level below LowerLightThreshold, set night = 1 [analogRead(ioPin) < LowerLightThreshold];
b	while true: if light level above UpperLightThreshold, set night = 0 [analogRead(ioPin) > UpperLightThreshold];