

All Pedestrian Phase and Barnes Dance Configurations at Intersections of Hobron & Kalia/Ena--Ala Moana

HDOT SIGNAL IMPROVEMENT PROJECT TEAM

DECEMBER 1, 2022

Major Issues with the Previous Settings

Significant Pedestrian and Bicyclist-Involved Crashes

Statistical Crash Data at Three Intersections from 2017 to 2021

Intersection along Ala Moana Blvd	Total Crashes	# Ped-Involved Crashes	# Bicycle- Involved Crashes
Hobron Ln	21	8	3
Kahanamoku St	8	1	0
Kalia/Ena Rd	13	3	1

Overview Signal Timing Schedule:

Kalia/Ena Rd - Ala Moana Intersection

Weekdays	Time Period	Cycle Length
AM Peak Plan	5:00am to 12:00pm	165 Second (Coordination mode)
Early PM Peak	12:00pm to 4:00pm	175 Second (Coordination mode)
PM Peak Plan	4:00pm to 7:00pm	175 Second (Coordination mode)
Off-Peak Plan	7:00pm to 5:00am	Variable Cycle Length (Fully Actuated)
Weekends	24 hours	Variable Cycle Length (Fully Actuated)

Traffic Volume Sample Data:

Kalia/Ena Rd - Ala Moana Intersection

Weekly Average Volume Data Sampled from November 6-12, 2022

Approach	EB Ala Moana (Flow Rate)	WB Ala Moana	NB Kalia	SB Ena	
Time Period	5:00-6:00	143	119	80	89
	6:00-7:00	247	200	182	100
	7:00-8:00	382	322	239	95
	8:00-9:00	367	312	280	74
	9:00-10:00	404	311	335	91
	10:00-11:00	436	357	393	87
	11:00-12:00	442	366	401	85
	12:00-13:00	486	341	362	94
	13:00-14:00	502	329	383	95
	14:00-15:00	524	360	357	99
	15:00-16:00	543	403	315	102
	16:00-17:00	483	491	418	113
	17:00-18:00	494	456	395	113
	18:00-19:00	555	390	315	101
	19:00-20:00	541	336	227	118
	20:00-21:00	495	241	230	86

Timing Adjustments

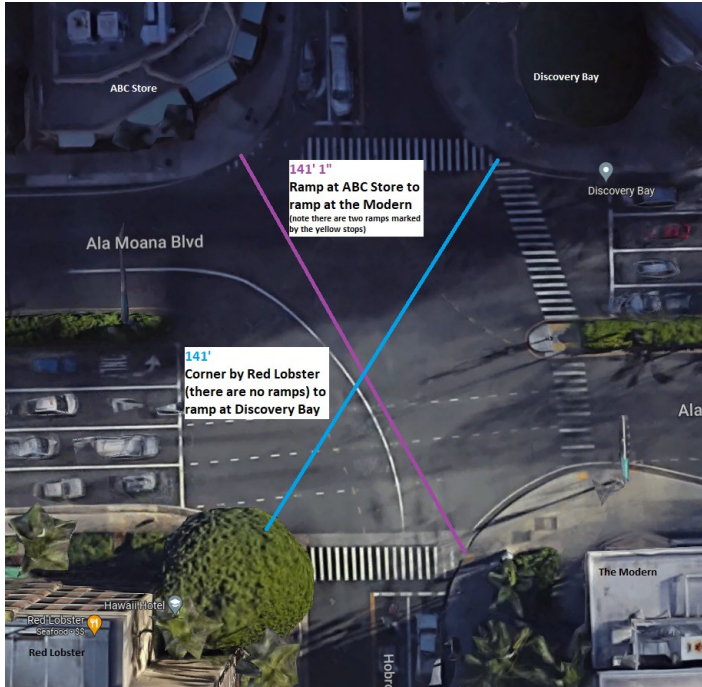
- Performance improvements
 - Traffic can be fully cleared within one cycle on the NB Kalia approach
 - Travel time from Hale Koa Parking Garage through Ala Moana Blvd is about 5-7 minutes
 - No significant travel time changes on WB/EB Ala Moana Blvd. from Kalia/Ena to Hobron and Hobron through Kalia/Ena

Travel Time and Delay Comparisons

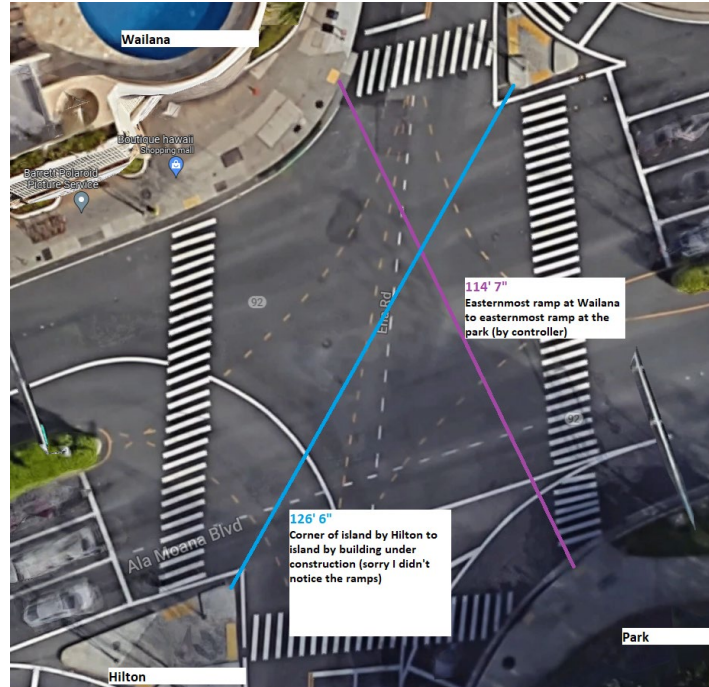
Travel Time and Delay Comparisons from Hobron Ln. to Kalia/Ena Rd. intersections

	From Hobron Ln. to Kalia/Ena Rd. intersections (PM Peak Hours)	SB Hobron Ln (Delays: Seconds)	NB Hobron Ln (Delays)	SB Ena Rd. (Delays)	NB Ena Rd. (Delays)
Pre-Pilot	7-9 Minutes	70-105	55-70	65-80	65-90
Pilot	8-11 Minutes	80-130	60-70	75-110	70-115
Adjusted	8-10 Minutes	70-95 (7-10 second less on average compated to initial pilot timing)	65-75 (3-5 second more on average)	65-95 (7-10 second less on average)	55-80 (10-12 second less on average)

Next Step: Barnes Dance Configurations



New Exclusive Ped Crossing Time
50 seconds



New Exclusive Ped Crossing Time
55 seconds

- **Potential Impacts:**
 - Cycle Lengths increase by 5 seconds (both AM and PM peak plans)
 - Traffic delays increase by 1 to 3 seconds in each direction
 - Pedestrian crossing time increase by 3 to 6 seconds