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IN THE CIRCUIT COURT OF THE SECOND CIRCUIT

STATE OF HAWAI'I

MAUI TOMORROW FOUNDATION, INC.,)
a Hawai'i non-profit corporation; FRIENDS)
OF HALEAKALA NATIONAL PARK,)
INC., a Hawai'i non-profit corporation; and)
the KAHULUI HARBOR COALITION, an)
unincorporated association;)

Plaintiffs,)

vs.)

THE DEPARTMENT OF)
TRANSPORTATION OF THE STATE OF)
HAWAI'I; BARRY FUKUNAGA, in his)
capacity as Director of THE DEPARTMENT)
OF TRANSPORTATION OF THE STATE)
OF HAWAI'I; and MICHAEL FORMBY, in)
his capacity as Director of Harbors of THE)
DEPARTMENT OF TRANSPORTATION)
OF THE STATE OF HAWAI'I;)

Defendants,)

and)

COUNTY OF MAUI,)

Intervenor.)

CIVIL NO. 06-1-0027 (1)
(Declaratory Judgment)

STATE OF HAWAI'I'S REPORT AS TO
SUPERFERRY OPERATIONS

EXHIBITS "A" TO "C"

CERTIFICATE OF SERVICE

DATE: FEBRUARY 1, 2008

TIME: 3:30 P.M.

JUDGE: JOEL E. AUGUST

TRIAL DATE: FEBRUARY 25, 2008

STATE OF HAWAII'S REPORT AS TO SUPERFERRY OPERATIONS

The court directed the State to report as to actual levels of service and actual traffic impacts of HSF operations. Exhibit "A" attached hereto is that report, including information as to both observation of operations and quantitative analysis of operations.

Exhibit "B" is a report as to Superferry bookings, including vehicle bookings, for January 2008. (Actual counts may be more or less but the difference is minor). Exhibit "C" is a report showing the total number of vehicles coming into Honolulu Harbor (from Maui) and departing from Honolulu Harbor (to Maui) for the month of December 2007. HSF has declined to provide daily information for this period.

DATED: Honolulu, Hawai'i, January 31, 2008.



William J. Wynhoff
Deputy Attorney General
Attorney for State of Hawai'i

EXHIBIT “A”

MEMORANDUM

TO: Sue Sakai, Belt Collins

CC: Dean Watase, Hawaii Department of Transportation, Harbors Division
Bill Wynhoff, State of Hawaii

FROM: Dick Kaku, Eugene Tang, Michael Kennedy and Miguel Núñez

DATE: January 30, 2008

SUBJECT: Kahului Harbor Supplemental EA for 2015 **Ref:** LA07-2191

Fehr & Peers/Kaku Associates analyzed current traffic conditions in the vicinity of Kahului Harbor on the island of Maui to assess the impact of the Hawaii Superferry (HSF) on traffic operations on the local street system. The analysis includes an assessment of existing traffic operations on the streets that provide access to the portion of Kahului Harbor that houses the HSF terminal, a discussion of ferry operations as it loaded and unloaded passenger vehicles during its initial period of operation in mid-January 2008, and an evaluation of the traffic conditions at two key intersections under projected conditions with the addition of a maximum passenger load on the ferry.

STUDY INTERSECTIONS

The HSF terminal is on Pier 2 of Kahului Harbor in Kahului, Maui, Hawaii. Access to Pier 2 is provided by two intersections along Ka'ahumanu Avenue, both of which are signalized:

- Ka'ahumanu Avenue & Pu'unene Avenue
- Ka'ahumanu Avenue & Wharf Street

Peak period turning movement traffic counts were conducted in April 2007 at the two study intersections during the following time periods:

- AM (7:00 - 9:00 AM)
- Mid-AM (9:00 - 11:00 AM)
- PM (3:30 - 5:30 PM)

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An additional series of traffic counts were collected at the study intersections in January 2008 for the following time period:

- Late PM (5:00 PM-8:00 PM)

In order to reflect 2008 conditions, the year 2007 traffic counts were adjusted by growth rates that reflect the changes on each street during the period from April 2007 to today. The growth rate is consistent with the annualized number used in the planning studies conducted for the Kahului Harbor Master Plan environmental assessments for the Hawaii Department of Transportation (HDOT). The specific rates are 1% per year for Ka'ahumanu Avenue and 3% per year for Pu'unene Avenue.

All counts except the 2008 counts were conducted prior to the initial commencement of HSF service into and out of Kahului Harbor in November 2007, and after its stoppage but prior to its re-commencement on January 13, 2008.

EXISTING CONDITIONS LEVEL OF SERVICE

Level of service (LOS) is a qualitative measure used to describe the condition of traffic flow ranging from excellent conditions (LOS A) to overloaded conditions (LOS F). The level of service definitions for signalized intersections are provided in Table 1. LOS D is typically considered the minimum acceptable LOS in urban areas and is, therefore, used for this analysis.

LOS analyses were conducted at both study intersections to determine existing operating conditions for each of the time periods using the operations methodology for signalized intersections from *2000 Highway Capacity Manual* (2000 HCM) (Transportation Research Board, 2000).

Table 2 presents the existing LOS for both study intersections during all four time periods, indicating that both intersections operate at LOS C or better during each peak hour. The intersection delay at Ka'ahumanu Avenue & Pu'unene Avenue ranges between 18 and 27 seconds. The delay at the intersection of Ka'ahumanu Avenue & Wharf Street ranges between seven and 12 seconds.

Both intersections operate at an acceptable LOS during each of the four time periods.

OBSERVATIONS

As part of a broader analysis of operation of the ferry being conducted as part of the Rapid Risk Assessment of the HSF for HDOT in compliance with the legislation that authorized commencement of its services, field observations of the HSF were conducted at the Kahului Harbor. These observations were performed between January 20 and 23, with a focus on potential traffic operational issues caused by the loading and unloading of passenger vehicles

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onto and off of the HSF. At the time of the observations, only two scheduled sailings took place each day at Kahului Harbor: the 10:15 AM arrival from Honolulu and the 11:15 AM departure to Honolulu. Published information for the HSF indicates that the facility gates are opened approximately two hours prior to departure and closed approximately 30 minutes prior to departure. The field observations were performed for the entire period around the overlapping arrival and departure times, i.e., from 9:15 to 10:45 AM each day.

HSF Patronage

Actual passenger loads were provided by HSF staff for the four days when observations of ferry operations were made. The highest demand was observed on Monday, January 21 (Martin Luther King, Jr. holiday) with 135 vehicles, of which 41 were returning to Kahului and 94 were departing from Kahului. Based on conversations with staff, this was the highest demand to date since HSF service restarted after its stoppage in November 2007. The remainder of the observations showed total vehicular demand ranging from 59 vehicles to 80 vehicles with an average split of 40% returning to Kahului and 60% departing from Kahului.

Summary of Observations

The following summarizes the key points relative to the traffic impact of the loading and unloading of passenger vehicles onto and off of the ferry:

- Traffic Control Officers (TCOs) were positioned at Ka'ahumanu & Pu'unene to direct traffic.
- Gates were generally opened by 9:00 AM each day.
- On each day, most departing vehicles, i.e., vehicles planning to embark on the ferry, arrived at the harbor area within 75 minutes of scheduled departure, or by 10:00 AM. Vehicles disembarking the vessel typically offloaded within 15 minutes after the unloading of vehicles commenced. Therefore, disembarking vehicles had vacated the harbor area by 9:45 AM.
- No additional queuing was observed on Pu'unene Avenue as a result of incoming ferry vehicles at any time on any of the four days.
- Departing vehicles were carefully controlled by the TCOs assigned to the ferry in the harbor area. These officers ensured that the queuing of departing vehicles at Ka'ahumanu Avenue did not block vehicles attempting to access the bank parking lot, did not block vehicles accessing other areas in the harbor, and did not block vehicles arriving to board the ferry. The officers also ensured that vehicles were not allowed to leave the harbor area if no queuing space was available on the southbound leg of Pu'unene Avenue.

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- Neither study intersection experienced any congestion on any observation day during either the arrival or departure of vehicles associated with the ferry.
- Both intersections operated freely without congestion on all four days during the ferry loading and unloading of vehicles, with little or no queuing of vehicles on any approach of the intersections, and without any delays associated with ferry operations.

On Monday, January 21, 2008, the intersections did become congested from approximately 11:00 AM until 12:00 noon, when the observation of the intersections were concluded. This congestion, which was primarily caused by the higher than normal traffic volumes on Ka'ahumanu Avenue, occurred after all vehicles disembarking the ferry had departed the area, and after all vehicles embarking the ferry had arrived and were either on the ferry or at least within the harbor gates. Discussion with harbor staff and the TCOs indicated that these higher than normal traffic volumes and the subsequent traffic congestion was generated by the holiday activities at the adjacent shopping centers and was totally unrelated to the ferry.

TRAFFIC OPERATIONS WITH VEHICLES FROM FERRY

Fehr & Peers/Kaku Associates assessed the potential impact of the HSF on the two study intersections under existing conditions. The first step in this element of the study was to develop trip generation estimates for the operation of the ferry. These volumes were then added to the two intersections and analyzed to assess the potential impacts.

HSF Trip Generation

The HSF operations and financial plan is based on the assumption that once operation of the ferry normalizes, it will have a daily average of 110 vehicles arriving at and departing from Kahului Harbor. The peak day is projected to generate a demand of 153 vehicles per sailing. These estimates were converted into vehicle trips using the following assumptions:

1. Other than the exception noted in item 5 below, all traffic generated by loading and unloading of vehicles and passengers would occur in one hour.
2. Passengers with vehicles boarding the ferry would generate one vehicle trip per sailing in the inbound (into the harbor) direction.
3. Passengers with vehicles disembarking from the ferry would generate one vehicle trip per sailing in the outbound (out of the harbor) direction.
4. Loading and unloading passengers without vehicles would generate two vehicle trips per sailing, one vehicle trip inbound to pick up or drop off the passenger at the terminal and one outbound to leave the harbor after passenger pick-up or drop-off.

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January 30, 2008
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5. Only 90% of the passengers loading onto the ferry (both with and without vehicles) would arrive at the harbor during the peak hour.

These assumptions were used to develop the HSF traffic generation estimates. As shown in Table 3, the average weekday trip generation is 267 vehicles trips per hour and the peak weekday demand is projected to generate a total of 371 vehicles per hour (vph). The peak trips would include 178 vph inbound and 193 vph outbound. These trip estimates were applied to both HSF sailings in the mid-AM and late-PM periods.

Traffic Impact Analysis

As indicated in Table 4, the addition of HSF-generated traffic would result in the intersection of Ka'ahumanu Avenue & Pu'unene Avenue experiencing an additional six seconds of delay during the mid-AM and an additional seven seconds of delay during the late-PM period. Although the intersection delay increases slightly, the intersection continues to operate at LOS C with HSF traffic. At the intersection of Ka'ahumanu Avenue & Wharf Street, the addition of HSF traffic results in negligible increases during the mid-AM and the late-PM periods. The intersection LOS increases to LOS B during the mid-AM and remains at LOS A during the late-PM period with HSF traffic.

Both intersections continue to operate at an acceptable LOS during each period with the addition of HSF traffic.

CONCLUSION

The intersections of Ka'ahumanu Avenue & Pu'unene Avenue and Ka'ahumanu Avenue & Wharf Street currently operate at an acceptable LOS during all peak periods, both with and without the addition of HSF-related traffic. Therefore, the Hawaii Superferry would not have an impact on the operation of either intersection.

TABLE 1
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED
INTERSECTIONS

Level of Service	Volume/Capacity	Average Stopped Delay per Vehicle (seconds)*
A	0.000 – 0.600	≤ 10
B	>0.600 – 0.700	>10 and ≤ 20
C	>0.700 - 0.800	>20 and ≤ 35
D	>0.800 - 0.900	>35 and ≤ 55
E	>0.900 - 1.000	>55 and ≤ 80
F	> 1.000	>80

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

**TABLE 2
EXISTING INTERSECTION LEVELS OF SERVICE**

Intersections	Peak Hour	Existing (2008)	
		Del/Veh ¹	LOS
1. Ka'ahumanu Av & Pu'unene Av	A.M.	18.3	B
	Mid-A.M.	22.2	C
	P.M.	27.2	C
	Late-P.M.	21.5	C
2. Ka'ahumanu Av & Wharf St	A.M.	6.7	A
	Mid-A.M.	9.2	A
	P.M.	11.5	B
	Late-P.M.	11.8	B

Note:

¹ Delay indicates average stopped delay per vehicle in seconds.

**TABLE 3
HSF TRIP GENERATION FORECASTS**

HSF Demand Scenario	Trip Generation (Vehicles)		
	Inbound	Outbound	Total
Projected Daily Average	128	139	267
Projected Peak Day	178	193	371

TABLE 4
EXISTING INTERSECTION LEVELS OF SERVICE WITH HSF

Intersections	Peak Hour	Existing (2008)		Existing with HSF		Change in Delay
		Del/Veh ¹	LOS	Del/Veh ¹	LOS	
1. Ka'ahumanu Av & Pu'unene Av	A.M.	18.3	B	18.3	B	0.0
	Mid-A.M.	22.2	C	28.4	C	6.2
	P.M.	27.2	C	27.2	C	0.0
	Late-P.M.	21.5	C	28.6	C	7.1
2. Ka'ahumanu Av & Wharf St	A.M.	6.7	A	6.7	A	0.0
	Mid-A.M.	9.2	A	9.4	A	0.2
	P.M.	11.5	B	11.5	B	0.0
	Late-P.M.	11.8	B	12.1	B	0.3

Note:

1 Delay indicates average stopped delay per vehicle in seconds.

EXHIBIT “B”

Departures

Date	Route	Departure	NumBookings	NumPassengers	NumVehicles
01/01/2008 TUE	HON=>KAH	06:30	40	84	19
	KAH=>HON	11:15	47	101	30
01/02/2008 WED	HON=>KAH	06:30	100	231	65
	KAH=>HON	11:15	85	169	46
01/03/2008 THU	HON=>KAH	06:30	55	118	36
	KAH=>HON	11:15	70	142	41
01/04/2008 FRI	HON=>KAH	06:30	73	168	50
	KAH=>HON	11:15	79	184	48
01/05/2008 SAT	HON=>KAH	06:30	54	122	38
	KAH=>HON	11:15	78	178	49
01/06/2008 SUN	HON=>KAH	06:30	76	160	49
	KAH=>HON	11:15	83	183	56
01/07/2008 MON	HON=>KAH	06:30	73	148	52
	KAH=>HON	11:15	80	169	51
01/08/2008 TUE	HON=>KAH	06:30	65	148	37
	KAH=>HON	11:15	55	107	33
01/09/2008 WED	HON=>KAH	06:30	49	96	28
	KAH=>HON	11:15	66	131	31
01/10/2008 THU	HON=>KAH	06:30	59	133	39
	KAH=>HON	11:15	91	175	49

EXHIBIT "B"

01/11/2008 FRI	HON=>KAH	06:30	73	132	46
	KAH=>HON	11:15	96	192	63
01/12/2008 SAT	HON=>KAH	06:30	66	157	42
	KAH=>HON	11:15	80	179	48
01/13/2008 SUN	HON=>KAH	06:30	87	213	44
	KAH=>HON	11:15	121	223	75
01/14/2008 MON	HON=>KAH	06:30	54	111	39
	KAH=>HON	11:15	62	117	36
01/15/2008 TUE	HON=>KAH	06:30	50	93	29
	KAH=>HON	11:15	47	83	28
01/16/2008 WED	HON=>KAH	06:30	7	11	2
	KAH=>HON	11:15	11	22	6
	HON=>KAH	15:15	1	1	0
01/17/2008 THU	HON=>KAH	06:30	12	33	7
	KAH=>HON	11:15	7	11	1
	HON=>KAH	15:15	2	6	1
01/18/2008 FRI	HON=>KAH	06:30	103	217	84
	KAH=>HON	11:15	83	160	59
01/19/2008 SAT	HON=>KAH	06:30	134	328	80
	KAH=>HON	11:15	53	105	31
01/20/2008 SUN	HON=>KAH	06:30	47	98	30
	KAH=>HON	11:15	73	171	50
	HON=>KAH	15:15	1	1	1

01/21/2008 MON	HON=>KAH	06:30	67	144	41
	KAH=>HON	11:15	133	349	94
	HON=>KAH	15:15	1	2	1
	KAH=>HON	20:00	1	1	1
01/22/2008 TUE	HON=>KAH	06:30	48	99	28
	KAH=>HON	11:15	52	83	31
	HON=>KAH	15:15	1	1	1
	HON=>NAW	15:15	2	2	1
01/23/2008 WED	HON=>KAH	06:30	64	107	41
	KAH=>HON	11:15	72	118	38
01/24/2008 THU	HON=>KAH	06:30	51	87	29
	KAH=>HON	11:15	55	93	31
01/25/2008 FRI	HON=>KAH	06:30	76	133	42
	KAH=>HON	11:15	77	161	48
	NAW=>HON	19:15	2	2	1
	KAH=>HON	20:00	1	4	1
01/26/2008 SAT	HON=>KAH	06:30	76	166	39
	KAH=>HON	11:15	55	102	30
01/27/2008 SUN	HON=>KAH	06:30	18	30	11
	KAH=>HON	11:15	20	34	14
01/28/2008 MON	HON=>KAH	06:30	10	18	7
	KAH=>HON	11:15	28	49	19
	HON=>KAH	15:15	1	2	0
	KAH=>HON	20:00	2	4	0
01/29/2008 TUE	HON=>KAH	06:30	6	7	4
	KAH=>HON	11:15	15	20	13

01/30/2008 WED	HON=>KAH	06:30	14	22	11
	KAH=>HON	11:15	19	21	19
01/31/2008 THU	HON=>KAH	06:30	17	31	13
	KAH=>HON	11:15	39	50	32

EXHIBIT “C”

CHECK IF:

EXHIBIT "C"

IN THE CIRCUIT COURT OF THE SECOND CIRCUIT

STATE OF HAWAI'I

MAUI TOMORROW FOUNDATION, INC.,)	CIVIL NO. 06-1-0027 (1)
a Hawai'i non-profit corporation; FRIENDS)	(Declaratory Judgment)
OF HALEAKALA NATIONAL PARK,)	
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HAWAI'I; BARRY FUKUNAGA, in his)	
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DEPARTMENT OF TRANSPORTATION)	
OF THE STATE OF HAWAI'I;)	
)	
Defendants,)	
)	
and)	
)	
COUNTY OF MAUI,)	
)	
Intervenor.)	

CERTIFICATE OF SERVICE

I hereby certify that I caused to be served a true and correct copy of the foregoing document on the following persons by e-mail and regular mail on January 31, 2008:

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DATED: Honolulu, Hawai'i January 31, 2008.



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