ITE DATA COLLECTION PROJECT

Student Chapter at the University of Hawai'i at Mānoa

Hale Pawa'a | Honolulu, Hawai'i

Prepared For:
ITE Western District

Prepared By:
ITE Student Chapter at the University of Hawai'i at Mānoa

Student Chapter at the
University of Hawai'i at Mānoa

May 22, 2023

Ms. Jeanne Acutanza,
Technical Committee Chair
ITE Western District

Subject: Submittal for ITE Western District 2023 Data Collection Project

Dear Ms. Acutanza,

Enclosed is the Institute of Transportation Engineers Student Chapter at the University of Hawai'i at Mānoa (ITE at UH Mānoa) report for the ITE Western District 2023 Data Collection Projects. Our proposal consists of collection of trip generation and parking demand data at Hale Pawa'a, a medical care facility located in Honolulu, Hawai'i and corresponds with ITE Land Use 720 Medical-Dental Office Building.

ITE at UH Mānoa is appreciative of this opportunity to submit our data collection report. Should you have any questions, please contact me by email at elorica@hawaii.edu or cell at 808-469-6322.

Sincerely,

Eric Jonah Lorica
President
ITE Student Chapter at the University of Hawai'i

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1. Introduction

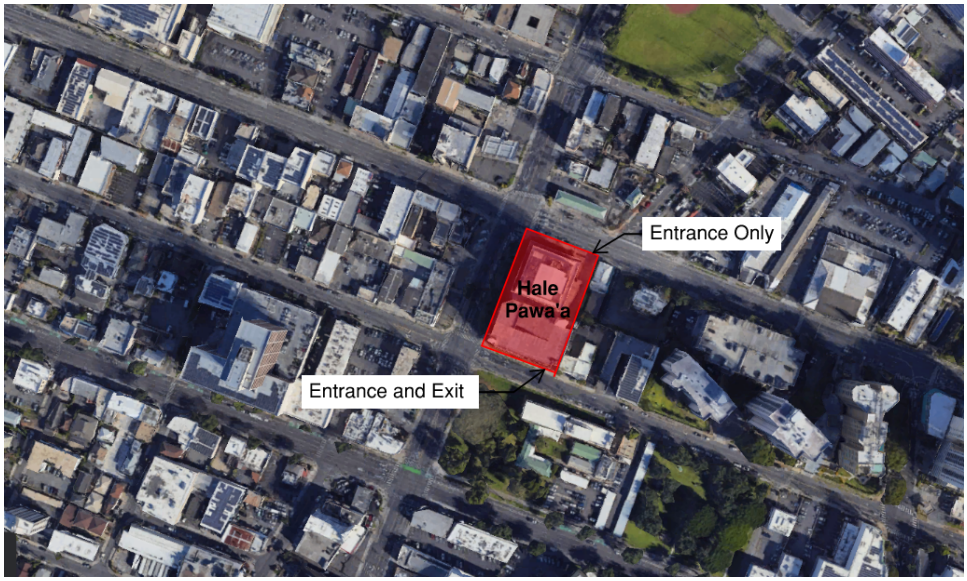
1.1. Scope of Work

The ITE Student Chapter at the University of Hawai‘i at Mānoa (ITE at UH Mānoa) conducted a data collection project as part of the 2023 ITE Western Data Collection Fund. The proposed project entailed collection of trip generation and parking generation data at Hale Pawa‘a, a medical care facility located in Honolulu, Hawai‘i. The purpose of this collection is to supplement the existing data set for Land Use Type 720: Medical-Dental Office Building. This report provides a summary of the data collected by ITE at UH Mānoa.

1.2. Site Description

The study site is Hale Pawa‘a, a medical care facility located in Honolulu, Hawai‘i. Hale Pawa‘a is a nine-story, 127,268 square feet (sf) medical office building featuring specialty clinics, office space, diagnostic imaging, diagnostic laboratory and pharmacy space. The adjacent eight-story, 161,900 sf parking structure houses 400 parking stalls (see Figure 1). Access to the site is provided by two driveways, a one-way (entry) driveway off South Beretania Street and a two-way driveway off Young Street.

Figure 1: Location Map



Operating hours of the facility are from 6:30 a.m. to 8:30 p.m. Mondays through Fridays and 7:00 a.m. to 5:00 p.m. on Saturdays. It should be noted that a minimal number of tenants do operate beyond the building operating hours.

2. Methodology

Data collection of site-generated and parking demand were conducted over three weekdays and a Saturday from April 13, 2023 through April 17, 2023. The data collection consisted of the number of vehicles entering and exiting at the study site's driveways during the morning peak between 7:00 a.m. and 9:00 a.m. and the afternoon peak between 4:00 p.m. and 6:00 p.m on weekdays and a parking study on a two weekdays and a Saturday. Data collection sheets are included in Appendices A and B. The count was performed by 5 student volunteers, all of whom were student members of ITE at UH Mānoa.

3. Results

3.1. Existing Trip Generation

As previously mentioned, field investigations included observations at the project accesses off South Beretania Street and Young Street during the morning and afternoon peak hours over three weekdays. A summary of the observed peak hour trip generation is summarized in Table 1.

Table 1: Observed Peak Hour Trip Generation

Thursday, April 13, 2023		
		TRIP ENDS
AM Peak Hour 7:30 - 8:30 a.m.	ENTER EXIT TOTAL	213 (76%) 67 (24%) 280
PM Peak Hour 4:00 - 5:00 p.m.	ENTER EXIT TOTAL	52 (29%) 127 (71%) 179
Friday, April 14, 2023		
		TRIP ENDS
AM Peak Hour 7:30 - 8:30 a.m.	ENTER EXIT TOTAL	197 (74%) 68 (26%) 265
PM Peak Hour 4:00 - 5:00 p.m.	ENTER EXIT TOTAL	71 (29%) 172 (71%) 243

Table 1: Observed Peak Hour Trip Generation (Cont'd)

Monday, April 14, 2023		
		TRIP ENDS
AM Peak Hour 8:00 - 9:00 a.m.	ENTER EXIT TOTAL	198 (70%) 85 (30%) 283
PM Peak Hour 4:00 - 5:00 p.m.	ENTER EXIT TOTAL	77 (25%) 236 (75%) 313

3.2. Trip Generation Analysis

Using the entering and exiting data from the Hale Pawaʻa facility, an assessment was conducted to compare the site-collected data with the number of trips calculated based on the average rates included in the Institute of Transportation Engineers (ITE) "Trip Generation, 11th Edition," 2021 for the land use Medical-Dental Office Building. Table 2 summarizes the calculated trip generation characteristics that would have been expected from the project site related to the AM and PM peak hours of traffic and the observed peak hour trip generation.

Table 2: Observed and Calculated Peak Hour Trip Generation

Peak Hour		Calculated Trips	Observed Trips		
			Thursday	Friday	Monday
AM Peak Hour	ENTER EXIT TOTAL	276 78 354	213 67 280	197 68 265	198 85 283
PM Peak Hour	ENTER EXIT TOTAL	123 317 440	52 127 179	71 172 243	77 236 313

The observed trip generation associated with the medical-dental uses in Hale Pawaʻa is lower than the calculated trip generation using the ITE Trip Generation Manual. During the AM peak hour, there were 22% less trips while there were 44% less trips during the PM peak hour. The lower trip generation observed for the project could be explained due to the size of the building. The average square footage of the other sites used to derive rates included

in the ITE Trip Generation Manual for the Medical-Dental Office Building Gross Floor Area (GFA) is 28 ksf while Hale Pawa'a encompasses 127 ksf GFA. This is approximately 4.5 times greater than the average GFA used in the ITE Trip Generation Manual. In addition, the project site is located in close proximity to a number of transit resources with several bus routes easily accessible within a ¼ mile of Hale Pawaʻa, which may reduce the total number of vehicular trips accessing the study site. While the observed trip generation is lower, the observed distribution of entering and exiting trips during both peak periods generally concurs with the distribution provided in the ITE Trip Generation Manual of 78% entering/22% exiting and 28% entering/72% exiting during the AM and PM peak periods, respectively.

3.3. Parking Demand Analysis

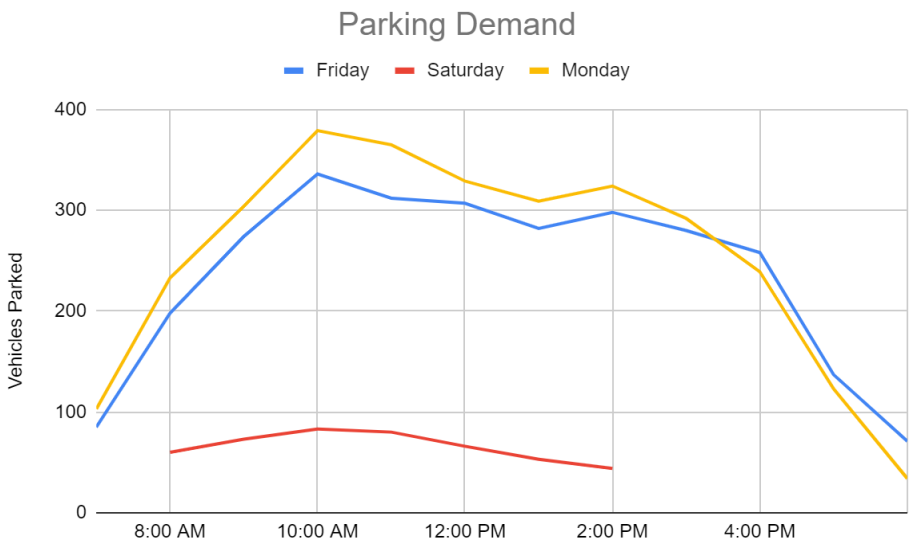
Parking at Hale Pawaʻa is provided via an eight-story parking structure which includes 400 parking stalls. A parking gate attendant manages the parking gate from 7:00 a.m. to 6:00 p.m. Monday through Friday and from 8:00 a.m. to 2:00 p.m. The parking rate at Hale Pawaʻa is free for the first hour with each following 30 min or fraction thereof is $1 with a maximum daily parking rate of $30.

A parking survey of the Hale Pawaʻa's parking structure was conducted on April 14, 2023 (Friday), April 15, 2023 (Saturday), and April 17, 2023 (Monday). The survey included hourly parking occupancy counts from 7.00 a.m. to 6:00 p.m. on the weekdays and 8:00 a.m. to 2:00 p.m. on Saturday. Total parking occupancy for the parking structure peaked at 379 spaces, or 91% of the 400 total spaces, at 10:00 a.m. on Monday. The overall parking demand on Saturday was lower, with occupancy peaking at 83 spaces, or 20% of the 400 total spaces, also occurring at 10:00 a.m. Table 3 summarizes the peak parking demand and Figure 2 graphically depicts peak parking demand throughout the duration of the study.

Table 3: Summary of Observed Parking Demand

	Friday	**Saturday**	**Monday**
Peak Hour	10:00 a.m.	10:00 a.m.	10:00 a.m.
Parked Cars	336	83	379
% of Parking Capacity Used	84%	20%	91%

Figure 2: Parking Demand for All Days



ITE has their own parking demand methodology which is published in "Parking Generation, 5th Edition," 2017. The ITE parking demand rates are developed empirically by correlating parking demand data with various land use characteristics such as the parking demand rate per 1,000 sf of development. Table 4 provides the average parking demand rate for the project site on weekdays and Saturdays. The observed average parking rate is provided for comparison purposes.

Table 4: ITE Parking Demand and Observed Parking Demand

	ITE Parking Rate (Parking Demand/1000 sq. ft)	Observed Parking Rate (Parking Demand/1000 sq. ft)
Weekday (Monday - Friday)	3.23	2.81
Saturday	0.56	0.65

The observed parking rate of Hale Pawaʻa is lower on the weekdays and higher on Saturday than the parking demand rate provided by the ITE Parking Generation Manual. While the ITE and observed parking rates differ, the observed peak parking demand on weekdays and Saturday fell within the peak period of parking demand listed in the ITE Parking Generation Manual.

4. Conclusion

Hale Pawaʻa is located in Honolulu, Hawaiʻi that features a nine-story, 127,268 square feet medical office building and an eight-story parking structure that houses 400 parking stalls. As part of the ITE Western District 2023 Data Collection Fund, data was collected at the project site to assess the trip generating characteristics and parking demand of the respective land use. Although the observed trip generation and parking demand differed from the methodology, the discrepancy is the result could be explained by the difference in size of the land use between the study site and the average size of the land use of the data provided by ITE. In addition, the proximity to several transit routes may also have had an impact on the observed trip generation rate and parking demand at the study site.

5. Acknowledgements

ITE at UH Mānoa would like to thank their Professional Mentors, Jennylyn Tapat Morill and Cathy Leong, and their Faculty Advisor, Dr. Roger Chen for guiding the team through the data collection project. In addition, the student chapter would like to thank the following students members who volunteered to help complete the project:

- Eric Jonah Lorica (Report Writing, Data Collection)
- Ruimin Lin (Report Writing, Data Collection)
- Mason Negron (Data Collection)
- Marissa Chun (Data Collection)
- West Andrade (Data Collection)

Appendix A

Trip Generation Collection Sheet

Institute of Transportation Engineers

Trip Generation Data Form (Part 1)

Land Use/Building Type:[1] Medical-Dental Office Building			ITE Land Use Code: 720
Source:			Source No. (*ITE use only*):
Name of Development: Hale Pawa'a			Day of the Week: Friday
City: Honolulu	State/Province: HI	Zip/Postal Code: 96814	Day: 14 Month: April Year: 2023
Country: USA			Metropolitan Area: Honolulu

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

Location Within Area:

- ☐ (1) CBD
- ☑ (2) Urban (Non-CBD)
- ☐ (3) Suburban (Non-CBD)
- ☐ (4) Suburban CBD
- ☐ (5) Rural
- ☐ (6) Freeway Interchange Area (Rural)
- ☐ (7) Not Given

Independent Variable: (include data for as many as possible)[2]	Actual	Estimated		Actual	Estimated
_____ (1) Employees (#)	☐	☐	400 (9) Parking Spaces (% occupied: _____)	☑	☐
_____ (2) Persons (#)	☐	☐	_____ (10) Beds (% occupied: _____)	☐	☐
_____ (3) Total Units (#) (indicate unit:_____)	☐	☐	_____ (11) Seats (#)	☐	☐
_____ (4) Occupied Units (#) (indicate unit:_____)	☐	☐	_____ (12) Servicing Positions/Vehicle Fueling Positions	☐	☐
127,268 (5) Gross Floor Area (gross sq. ft.) (% of development occupied 96%)	☑	☐	_____ (13) Shopping Center % Out-parcels/pads	☐	☐
_____ (6) Net Rentable Area (sq. ft.)	☐	☐	_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
_____ (7) Gross Leasable Area (sq. ft.) (% of development occupied _____)	☐	☐	_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
			_____ (16) Other _____	☐	☐
_____ (8) Total Acres (% developed: _____)	☐	☐	_____ (17) Other _____	☐	☐

Detailed Description of Development:[3]

The study site is Hale Pawa'a, a medical care facility located in Honolulu, Hawai'i. Hale Pawa'a is a nine-story, 127,268 square feet (sf) medical office building and an eight-story parking structure houses 400 parking stalls

Access to the site is provided by two driveways, a one-way (entry) driveway off South Beretania Street and a two-way driveway off Young Street.

2. Definitions for several independent variables can be found in the *Trip Generation,* Second Edition, *User's Guide* Glossary.

3. Please provide all pertinent information to describe the subject project, including the presence of bicycle/pedestrian facilities. To report bicycle/pedestrian volumes, please refer to Part 4 of this data form.

Other Data:

Vehicle Occupancy (#):
_____ A.M. _____ P.M. _____ 24-hour %

Percent by Transit:
_____ A.M. % _____ P.M. % _____ 24-hour %

Percent by Carpool/Vanpool:
_____ A.M. % _____ P.M. % _____ 24-hour %

Employees by Shift:

	Start Time	End Time	Employees (#)
First Shift:	_____	_____	_____
Second Shift:	_____	_____	_____
Third Shift:	_____	_____	_____

Parking Cost on Site: Hourly $2 Daily $30

Transportation Demand Management (TDM) Information:

At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?

- ☑ No
- ☐ Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)

- ☐ (1) Transit Service
- ☐ (2) Carpool Programs
- ☐ (3) Vanpool Programs
- ☐ (4) Bicycle/Pedestrian Facilities and Site Improvements
- ☐ (5) Employer Support Measures
- ☐ (6) Preferential HOV Treatments
- ☐ (7) Transit and Ridesharing Incentives
- ☐ (8) Parking Supply and Pricing Management
- ☐ (9) Tolls and Congestion Pricing
- ☐ (10) Variable Work Hours/Compressed Work Weeks
- ☐ (11) Telecommuting
- ☐ (12) Other _____

Please Complete Form on Other Side

Institute of Transportation Engineers

Trip Generation Data Form (Part 2)

Summary of Driveway Volumes ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

	Average Weekday (M-F)						Saturday						Sunday					
	Enter		Exit		Total		Enter		Exit		Total		Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks
24-Hour Volume																		
A.M. Peak Hour of Adjacent[1] Street Traffic (7 – 9) Time *7:30 - 8:30*	197	0	68	0	265	0												
P.M. Peak Hour of Adjacent[1] Street Traffic (4 – 6) Time: *4:00 - 5:00*	71	0	172	0	243	0												
A.M. Peak Hour Generator[2] Time:																		
P.M. Peak Hour Generator[2] Time:																		
Peak Hour Generator[3] Time (Weekend):																		

[1.] **Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.). Please specify the peak hour.**
[2.] **Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.**
[3.] **Highest hourly volume during the entire day. Please specify the peak hour.**
Please refer to the *Trip Generation User's Guide* for full definition of terms.

Hourly Driveway Volumes- Average Weekday (M-F)

A.M. Period	Enter		Exit		Total		Mid-Day Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
6:00-7:00							11:00-12:00							3:00-4:00						
6:15-7:15							11:15-12:15							3:15-4:15						
6:30-7:30							11:30-12:30							3:30-4:30						
6:45-7:45							11:45-12:45							3:45-4:45						
7:00-8:00	165	0	55	0	220	0	12:00-1:00							4:00-5:00	71	0	172	0	243	0
7:15-8:15	182	0	63	0	245	0	12:15-1:15							4:15-5:15	57	0	162	0	219	0
7:30-8:30	197	0	68	0	265	0	12:30-1:30							4:30-5:30	47	0	147	0	194	0
7:45-8:45	183	0	80	0	263	0	12:45-1:45							4:45-5:45	36	0	123	0	159	0
8:00-9:00	170	0	79	0	249	0	1:00-2:00							5:00-6:00	28	0	97	0	125	0

☑ **Check if Part 3, 4 and/or additional information is attached.**

Survey conducted by: Name: Eric Jonah Lorica
Organization: ITE at UH Mānoa
Address: Holmes Hall 383, 2540 Dole St
City/State/Zip: Honolulu, HI 96814
Telephone #: 808-469-6322 Fax #: E-mail: elorica@hawaii.edu

Please return to: Institute of Transportation Engineers
Technical Projects Division
1627 Eye Street, NW, Suite 600
Washington, DC 20006 USA
Telephone: +1 202-785-0060
Fax: +1 202-785-0609
ITE on the Web: www.ite.org

Institute of Transportation Engineers

Trip Generation Data Form (Part 3)

Name/Organization: ITE at UH Manoa ***City/State:*** Honolulu, HI

Telephone Number: _____

Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.

Day of the week: Friday ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

A.M. Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
12:00-12:15							12:00-12:15						
12:15-12:30							12:15-12:30						
12:30-12:45							12:30-12:45						
12:45-1:00							12:45-1:00						
1:00-1:15							1:00-1:15						
1:15-1:30							1:15-1:30						
1:30-1:45							1:30-1:45						
1:45-2:00							1:45-2:00						
2:00-2:15							2:00-2:15						
2:15-2:30							2:15-2:30						
2:30-2:45							2:30-2:45						
2:45-3:00							2:45-3:00						
3:00-3:15							3:00-3:15						
3:15-3:30							3:15-3:30						
3:30-3:45							3:30-3:45						
3:45-4:00							3:45-4:00						
4:00-4:15							4:00-4:15	18	0	40	0	58	0
4:15-4:30							4:15-4:30	16	0	37	0	53	0
4:30-4:45							4:30-4:45	19	0	48	0	67	0
4:45-5:00							4:45-5:00	18	0	47	0	65	0
5:00-5:15							5:00-5:15	4	0	30	0	34	0
5:15-5:30							5:15-5:30	6	0	22	0	28	0
5:30-5:45							5:30-5:45	8	0	24	0	32	0
5:45-6:00							5:45-6:00	10	0	21	0	31	0
6:00-6:15							6:00-6:15						
6:15-6:30							6:15-6:30						
6:30-6:45							6:30-6:45						
6:45-7:00							6:45-7:00						
7:00-7:15	31	0	11	0	42	0	7:00-7:15						
7:15-7:30	34	0	9	0	43	0	7:15-7:30						
7:30-7:45	44	0	16	0	60	0	7:30-7:45						
7:45-8:00	56	0	19	0	75	0	7:45-8:00						
8:00-8:15	48	0	19	0	67	0	8:00-8:15						
8:15-8:30	49	0	14	0	63	0	8:15-8:30						
8:30-8:45	30	0	28	0	58	0	8:30-8:45						
8:45-9:00	43	0	18	0	61	0	8:45-9:00						
9:00-9:15							9:00-9:15						
9:15-9:30							9:15-9:30						
9:30-9:45							9:30-9:45						
9:45-10:00							9:45-10:00						
10:00-10:15							10:00-10:15						
10:15-10:30							10:15-10:30						
10:30-10:45							10:30-10:45						
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Institute of Transportation Engineers

Trip Generation Data Form (Part 1)

Land Use/Building Type:[1] Medical-Dental Office Building	ITE Land Use Code: 720
Source:	Source No. (*ITE use only*):
Name of Development: Hale Pawa'a	Day of the Week: Thursday
City: Honolulu State/Province: HI Zip/Postal Code: 96814	Day: 13 Month: April Year: 2023
Country: USA	Metropolitan Area: Honolulu

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

Location Within Area:

☐ (1) CBD ☐ (3) Suburban (Non-CBD) ☐ (5) Rural
☑ (2) Urban (Non-CBD) ☐ (4) Suburban CBD ☐ (6) Freeway Interchange Area (Rural)
☐ (7) Not Given

Independent Variable: (include data for as many as possible)[2]	Actual	Estimated		Actual	Estimated
_____ (1) Employees (#)	☐	☐	400 (9) Parking Spaces (% occupied: _____)	☑	☐
_____ (2) Persons (#)	☐	☐	_____ (10) Beds (% occupied: _____)	☐	☐
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_____ (4) Occupied Units (#) (indicate unit:_____)	☐	☐	_____ (12) Servicing Positions/Vehicle Fueling Positions	☐	☐
127,268 (5) Gross Floor Area (gross sq. ft.) (% of development occupied 96%)	☑	☐	_____ (13) Shopping Center % Out-parcels/pads	☐	☐
_____ (6) Net Rentable Area (sq. ft.)	☐	☐	_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
_____ (7) Gross Leasable Area (sq. ft.) (% of development occupied _____)	☐	☐	_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
			_____ (16) Other _____	☐	☐
_____ (8) Total Acres (% developed: _____)	☐	☐	_____ (17) Other _____	☐	☐

Detailed Description of Development:[3]

The study site is Hale Pawa'a, a medical care facility located in Honolulu, Hawai'i. Hale Pawa'a is a nine-story, 127,268 square feet (sf) medical office building and an eight-story parking structure houses 400 parking stalls

Access to the site is provided by two driveways, a one-way (entry) driveway off South Beretania Street and a two-way driveway off Young Street.

2. Definitions for several independent variables can be found in the *Trip Generation,* Second Edition, *User's Guide* Glossary.

3. Please provide all pertinent information to describe the subject project, including the presence of bicycle/pedestrian facilities. To report bicycle/pedestrian volumes, please refer to Part 4 of this data form.

Other Data:

Vehicle Occupancy (#):
_____ A.M. _____ P.M. _____ 24-hour %

Percent by Transit:
_____ A.M. % _____ P.M. % _____ 24-hour %

Percent by Carpool/Vanpool:
_____ A.M. % _____ P.M. % _____ 24-hour %

Employees by Shift:

	Start Time	End Time	Employees (#)
First Shift:	_____	_____	_____
Second Shift:	_____	_____	_____
Third Shift:	_____	_____	_____

Parking Cost on Site: Hourly $2 Daily $30

Transportation Demand Management (TDM) Information:

At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?

☑ No

☐ Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)

☐ (1) Transit Service
☐ (2) Carpool Programs
☐ (3) Vanpool Programs
☐ (4) Bicycle/Pedestrian Facilities and Site Improvements
☐ (5) Employer Support Measures
☐ (6) Preferential HOV Treatments
☐ (7) Transit and Ridesharing Incentives
☐ (8) Parking Supply and Pricing Management
☐ (9) Tolls and Congestion Pricing
☐ (10) Variable Work Hours/Compressed Work Weeks
☐ (11) Telecommuting
☐ (12) Other _____

Please Complete Form on Other Side

Institute of Transportation Engineers

Trip Generation Data Form (Part 2)

Summary of Driveway Volumes ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

	Average Weekday (M-F)						Saturday						Sunday					
	Enter		Exit		Total		Enter		Exit		Total		Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks
24-Hour Volume																		
A.M. Peak Hour of Adjacent[1] Street Traffic (7 – 9) Time *7:30 - 8:30*	213	0	67	0	280	0												
P.M. Peak Hour of Adjacent[1] Street Traffic (4 – 6) Time: *4:00 - 5:00*	52	0	127	0	179	0												
A.M. Peak Hour Generator[2] Time:																		
P.M. Peak Hour Generator[2] Time:																		
Peak Hour Generator[3] Time (Weekend):																		

[1.] **Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.). Please specify the peak hour.**
[2.] **Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.**
[3.] **Highest hourly volume during the entire day. Please specify the peak hour.**
Please refer to the *Trip Generation User's Guide* for full definition of terms.

Hourly Driveway Volumes- Average Weekday (M-F)

A.M. Period	Enter		Exit		Total		Mid-Day Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
6:00-7:00							11:00-12:00							3:00-4:00						
6:15-7:15							11:15-12:15							3:15-4:15						
6:30-7:30							11:30-12:30							3:30-4:30						
6:45-7:45							11:45-12:45							3:45-4:45						
7:00-8:00	193	0	51	0	244	0	12:00-1:00							4:00-5:00	52	0	127	0	179	0
7:15-8:15	198	0	58	0	256	0	12:15-1:15							4:15-5:15	44	0	124	0	168	0
7:30-8:30	213	0	67	0	280	0	12:30-1:30							4:30-5:30	37	0	137	0	174	0
7:45-8:45	195	0	77	0	272	0	12:45-1:45							4:45-5:45	37	0	129	0	166	0
8:00-9:00	165	0	86	0	251	0	1:00-2:00							5:00-6:00	37	0	118	0	155	0

☑ **Check if Part 3, 4 and/or additional information is attached.**

Survey conducted by: Name: Eric Jonah Lorica
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Institute of Transportation Engineers

Trip Generation Data Form (Part 3)

Name/Organization: ITE at UH Manoa ***City/State:*** Honolulu, HI

Telephone Number: _____

Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.

Day of the week: Thursday ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

A.M. Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
12:00-12:15							12:00-12:15						
12:15-12:30							12:15-12:30						
12:30-12:45							12:30-12:45						
12:45-1:00							12:45-1:00						
1:00-1:15							1:00-1:15						
1:15-1:30							1:15-1:30						
1:30-1:45							1:30-1:45						
1:45-2:00							1:45-2:00						
2:00-2:15							2:00-2:15						
2:15-2:30							2:15-2:30						
2:30-2:45							2:30-2:45						
2:45-3:00							2:45-3:00						
3:00-3:15							3:00-3:15						
3:15-3:30							3:15-3:30						
3:30-3:45							3:30-3:45						
3:45-4:00							3:45-4:00						
4:00-4:15							4:00-4:15	21	0	35	0	56	0
4:15-4:30							4:15-4:30	13	0	26	0	39	0
4:30-4:45							4:30-4:45	7	0	36	0	43	0
4:45-5:00							4:45-5:00	11	0	30	0	41	0
5:00-5:15							5:00-5:15	13	0	32	0	45	0
5:15-5:30							5:15-5:30	6	0	39	0	45	0
5:30-5:45							5:30-5:45	7	0	28	0	35	0
5:45-6:00							5:45-6:00	11	0	19	0	30	0
6:00-6:15							6:00-6:15						
6:15-6:30							6:15-6:30						
6:30-6:45							6:30-6:45						
6:45-7:00							6:45-7:00						
7:00-7:15	39	0	11	0	50	0	7:00-7:15						
7:15-7:30	47	0	12	0	59	0	7:15-7:30						
7:30-7:45	50	0	13	0	63	0	7:30-7:45						
7:45-8:00	57	0	15	0	72	0	7:45-8:00						
8:00-8:15	44	0	18	0	62	0	8:00-8:15						
8:15-8:30	62	0	21	0	83	0	8:15-8:30						
8:30-8:45	32	0	23	0	55	0	8:30-8:45						
8:45-9:00	27	0	24	0	51	0	8:45-9:00						
9:00-9:15							9:00-9:15						
9:15-9:30							9:15-9:30						
9:30-9:45							9:30-9:45						
9:45-10:00							9:45-10:00						
10:00-10:15							10:00-10:15						
10:15-10:30							10:15-10:30						
10:30-10:45							10:30-10:45						
10:45-11:00							10:45-11:00						
11:00-11:15							11:00-11:15						
11:15-11:30							11:15-11:30						
11:30-11:45							11:30-11:45						
11:45-12:00							11:45-12:00						

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Trip Generation Data Form (Part 1)

Land Use/Building Type:[1] Medical-Dental Office Building	ITE Land Use Code: 720
Source:	Source No. (*ITE use only*):
Name of Development: Hale Pawa'a	Day of the Week: Mondau
City: Honolulu State/Province: HI Zip/Postal Code: 96814	Day: 17 Month: April Year: 2023
Country: USA	Metropolitan Area: Honolulu

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

Location Within Area:

- ☐ (1) CBD
- ☑ (2) Urban (Non-CBD)
- ☐ (3) Suburban (Non-CBD)
- ☐ (4) Suburban CBD
- ☐ (5) Rural
- ☐ (6) Freeway Interchange Area (Rural)
- ☐ (7) Not Given

Independent Variable: (include data for as many as possible)[2]	Actual	Estimated
_____ (1) Employees (#)	☐	☐
_____ (2) Persons (#)	☐	☐
_____ (3) Total Units (#) (indicate unit:_____)	☐	☐
_____ (4) Occupied Units (#) (indicate unit:_____)	☐	☐
127,268 (5) Gross Floor Area (gross sq. ft.)	☑	☐
(% of development occupied 96%)		
_____ (6) Net Rentable Area (sq. ft.)	☐	☐
_____ (7) Gross Leasable Area (sq. ft.)	☐	☐
(% of development occupied _____)		
_____ (8) Total Acres (% developed: _____)	☐	☐
400 (9) Parking Spaces (% occupied: _____)	☑	☐
_____ (10) Beds (% occupied: _____)	☐	☐
_____ (11) Seats (#)	☐	☐
_____ (12) Servicing Positions/Vehicle Fueling Positions	☐	☐
_____ (13) Shopping Center % Out-parcels/pads	☐	☐
_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	☐	☐
_____ (16) Other _____	☐	☐
_____ (17) Other _____	☐	☐

Detailed Description of Development:[3]

The study site is Hale Pawa'a, a medical care facility located in Honolulu, Hawai'i. Hale Pawa'a is a nine-story, 127,268 square feet (sf) medical office building and an eight-story parking structure houses 400 parking stalls

Access to the site is provided by two driveways, a one-way (entry) driveway off South Beretania Street and a two-way driveway off Young Street.

2. Definitions for several independent variables can be found in the *Trip Generation,* Second Edition, *User's Guide* Glossary.

3. Please provide all pertinent information to describe the subject project, including the presence of bicycle/pedestrian facilities. To report bicycle/pedestrian volumes, please refer to Part 4 of this data form.

Other Data:

Vehicle Occupancy (#):
_____ A.M. _____ P.M. _____ 24-hour %

Percent by Transit:
_____ A.M. % _____ P.M. % _____ 24-hour %

Percent by Carpool/Vanpool:
_____ A.M. % _____ P.M. % _____ 24-hour %

Employees by Shift:

	Start Time	End Time	Employees (#)
First Shift:	_____	_____	_____
Second Shift:	_____	_____	_____
Third Shift:	_____	_____	_____

Parking Cost on Site: Hourly $2 Daily $30

Transportation Demand Management (TDM) Information:

At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?

- ☑ No
- ☐ Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)

- ☐ (1) Transit Service
- ☐ (2) Carpool Programs
- ☐ (3) Vanpool Programs
- ☐ (4) Bicycle/Pedestrian Facilities and Site Improvements
- ☐ (5) Employer Support Measures
- ☐ (6) Preferential HOV Treatments
- ☐ (7) Transit and Ridesharing Incentives
- ☐ (8) Parking Supply and Pricing Management
- ☐ (9) Tolls and Congestion Pricing
- ☐ (10) Variable Work Hours/Compressed Work Weeks
- ☐ (11) Telecommuting
- ☐ (12) Other _____

Please Complete Form on Other Side

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Trip Generation Data Form (Part 2)

Summary of Driveway Volumes ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

	Average Weekday (M-F)						Saturday						Sunday					
	Enter		Exit		Total		Enter		Exit		Total		Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks	All	Trucks
24-Hour Volume																		
A.M. Peak Hour of Adjacent[1] Street Traffic (7 – 9) Time *8:00 - 9:00*	198	0	85	0	283	0												
P.M. Peak Hour of Adjacent[1] Street Traffic (4 – 6) Time: *4:00 - 5:00*	77	0	236	0	313	0												
A.M. Peak Hour Generator[2] Time:																		
P.M. Peak Hour Generator[2] Time:																		
Peak Hour Generator[3] Time (Weekend):																		

[1.] **Highest hourly volume between 7 a.m. and 9 a.m. (4 p.m. and 6 p.m.). Please specify the peak hour.**
[2.] **Highest hourly volume during the a.m. or p.m. period. Please specify the peak hour.**
[3.] **Highest hourly volume during the entire day. Please specify the peak hour.**
Please refer to the *Trip Generation User's Guide* for full definition of terms.

Hourly Driveway Volumes- Average Weekday (M-F)

A.M. Period	Enter		Exit		Total		Mid-Day Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
6:00-7:00							11:00-12:00							3:00-4:00						
6:15-7:15							11:15-12:15							3:15-4:15						
6:30-7:30							11:30-12:30							3:30-4:30						
6:45-7:45							11:45-12:45							3:45-4:45						
7:00-8:00	167	0	48	0	215	0	12:00-1:00							4:00-5:00	77	0	236	0	313	0
7:15-8:15	182	0	60	0	242	0	12:15-1:15							4:15-5:15	65	0	210	0	275	0
7:30-8:30	199	0	74	0	273	0	12:30-1:30							4:30-5:30	47	0	198	0	245	0
7:45-8:45	196	0	78	0	274	0	12:45-1:45							4:45-5:45	31	0	140	0	171	0
8:00-9:00	198	0	85	0	283	0	1:00-2:00							5:00-6:00	30	0	127	0	157	0

☑ **Check if Part 3, 4 and/or additional information is attached.**

Survey conducted by: Name: Eric Jonah Lorica
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Institute of Transportation Engineers

Trip Generation Data Form (Part 3)

Name/Organization: ITE at UH Manoa ***City/State:*** Honolulu, HI

Telephone Number: _____

Detailed Driveway Volumes: Attach this sheet to Parts 1 and 2 if you are providing additional information.

Day of the week: Monday ***(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)***

A.M. Period	Enter		Exit		Total		P.M. Period	Enter		Exit		Total	
	All	Trucks	All	Trucks	All	Trucks		All	Trucks	All	Trucks	All	Trucks
12:00-12:15							12:00-12:15						
12:15-12:30							12:15-12:30						
12:30-12:45							12:30-12:45						
12:45-1:00							12:45-1:00						
1:00-1:15							1:00-1:15						
1:15-1:30							1:15-1:30						
1:30-1:45							1:30-1:45						
1:45-2:00							1:45-2:00						
2:00-2:15							2:00-2:15						
2:15-2:30							2:15-2:30						
2:30-2:45							2:30-2:45						
2:45-3:00							2:45-3:00						
3:00-3:15							3:00-3:15						
3:15-3:30							3:15-3:30						
3:30-3:45							3:30-3:45						
3:45-4:00							3:45-4:00						
4:00-4:15							4:00-4:15	16	0	64	0	80	0
4:15-4:30							4:15-4:30	27	0	47	0	74	0
4:30-4:45							4:30-4:45	23	0	88	0	111	0
4:45-5:00							4:45-5:00	11	0	37	0	48	0
5:00-5:15							5:00-5:15	4	0	38	0	42	0
5:15-5:30							5:15-5:30	9	0	35	0	44	0
5:30-5:45							5:30-5:45	7	0	30	0	37	0
5:45-6:00							5:45-6:00	10	0	24	0	34	0
6:00-6:15							6:00-6:15						
6:15-6:30							6:15-6:30						
6:30-6:45							6:30-6:45						
6:45-7:00							6:45-7:00						
7:00-7:15	34	0	8	0	42	0	7:00-7:15						
7:15-7:30	34	0	7	0	41	0	7:15-7:30						
7:30-7:45	50	0	16	0	66	0	7:30-7:45						
7:45-8:00	49	0	17	0	66	0	7:45-8:00						
8:00-8:15	49	0	20	0	69	0	8:00-8:15						
8:15-8:30	51	0	21	0	72	0	8:15-8:30						
8:30-8:45	47	0	20	0	67	0	8:30-8:45						
8:45-9:00	51	0	24	0	75	0	8:45-9:00						
9:00-9:15							9:00-9:15						
9:15-9:30							9:15-9:30						
9:30-9:45							9:30-9:45						
9:45-10:00							9:45-10:00						
10:00-10:15							10:00-10:15						
10:15-10:30							10:15-10:30						
10:30-10:45							10:30-10:45						
10:45-11:00							10:45-11:00						
11:00-11:15							11:00-11:15						
11:15-11:30							11:15-11:30						
11:30-11:45							11:30-11:45						
11:45-12:00							11:45-12:00						

Appendix B

Parking Generation Collection Sheet

Parking Demand Survey Form

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*(fill in all highlighted cells - * are required data)*

			Land Use Code*	720		
			Name of Site	Hale Pawaa		
			Brief Description of Site	Medical-Dental Office Building		
Transit*	Yes		**City**	Honolulu		
Area*	CND		**State**	HI	**Country**	USA
TMP*	No					
Parking Price*	$ 30.00	Daily Rate		$2.00	Hourly Rate	

Site Size*	**127,268**	**Units***	sq ft	**Occupancy***	96%	**Land Use**	
Site Size		**Units**		**Occupancy**			
Site Size		**Units**		**Occupancy**			
Site Size		**Units**		**Occupancy**			

Number of Parking Spaces Provided at Site 400

Highest Observed Parking Demand for the following hours of the day *(hour beginning)**

Date	04/14/23	04/15/23	4/17/23				
Day	Friday	Saturday	Monday				
12 Mid							
1:00 AM							
2:00 AM							
3:00 AM							
4:00 AM							
5:00 AM							
6:00 AM							
7:00 AM	85		103				
8:00 AM	198	60	233				
9:00 AM	274	73	304				
10:00 AM	336	83	379				
11:00 AM	312	80	365				
12 Noon	307	66	329				
1:00 PM	282	53	309				
2:00 PM	298	44	324				
3:00 PM	280		292				
4:00 PM	258		239				
5:00 PM	137		123				
6:00 PM	71		34				
7:00 PM							
8:00 PM							
9:00 PM							
10:00 PM							
11:00 PM							

Person	Eric Jonah Lorica	**Organization**	ITE at UH Mānoa
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Email	elorica@hawaii.edu		
Notes			

Enter data on the web at www.ite.org

Comments to: ite_staff@ite.org

IF not entered on web site, please mail to:

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