

ITE DATA COLLECTION PROJECT

Hale Pawa'a | Honolulu, Hawai'i



Student Chapter at the
University of Hawai'i at Mānoa



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 [REDACTED] or cell at [REDACTED].

Sincerely,

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

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1. Introduction

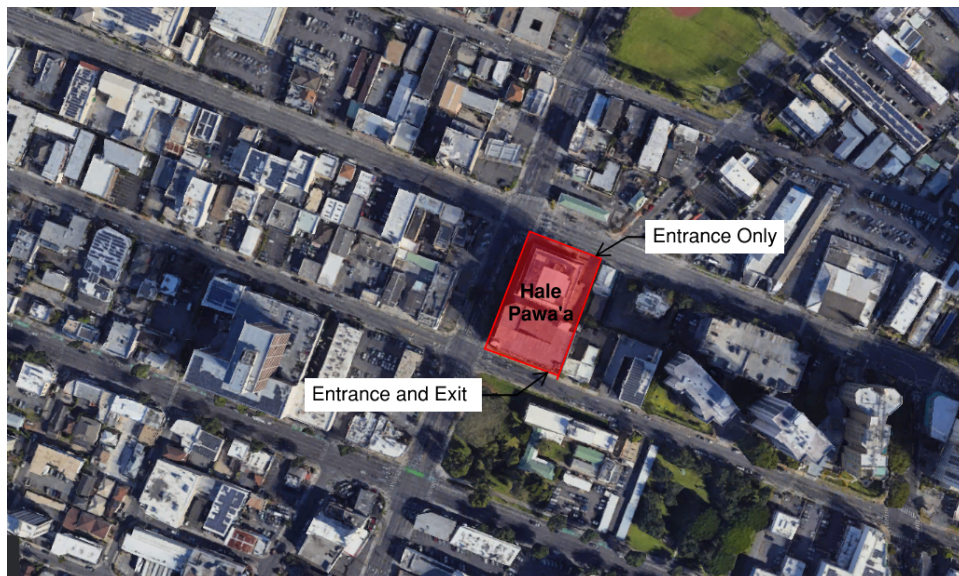
1.1. Scope of Work

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 Pawa‘a 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	276	213	197	198
	EXIT	78	67	68	85
	TOTAL	354	280	265	283
PM Peak Hour	ENTER	123	52	71	77
	EXIT	317	127	172	236
	TOTAL	440	179	243	313

The observed trip generation associated with the medical-dental uses in Hale Pawa‘a 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 Pawa‘a, 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

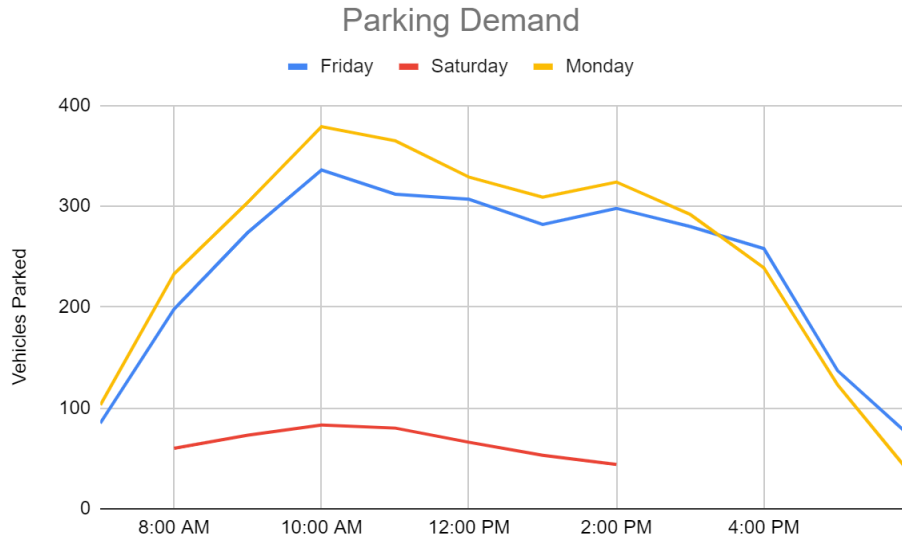
Parking at Hale Pawa‘a is provided via an eight-story parking structure which includes 400 parking stalls. A parking gate attendant manages the parking gate from 7:00 a.m. to 6:00 p.m. Monday through Friday and from 8:00 a.m. to 2:00 p.m. The parking rate at Hale Pawa‘a is free for the first hour with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

A parking survey of the Hale Pawa‘a’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 Pawa‘a 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 Pawa‘a is located in Honolulu, Hawai‘i 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 Negrón (Data Collection)
- Marissa Chun (Data Collection)
- West Andrade (Data Collection)

Appendix A

Trip Generation Collection Sheet

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: <input type="checkbox"/> (1) CBD <input type="checkbox"/> (3) Suburban (Non-CBD) <input type="checkbox"/> (5) Rural <input checked="" type="checkbox"/> (2) Urban (Non-CBD) <input type="checkbox"/> (4) Suburban CBD <input type="checkbox"/> (6) Freeway Interchange Area (Rural) <input type="checkbox"/> (7) Not Given				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.		
Independent Variable: (include data for as many as possible)²		Actual	Estimated	Actual	Estimated	
_____ (1) Employees (#)	<input type="checkbox"/>	<input type="checkbox"/>	<u>400</u> (9) Parking Spaces (% occupied: _____)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
_____ (2) Persons (#)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (10) Beds (% occupied: _____)	<input type="checkbox"/>	<input type="checkbox"/>	
_____ (3) Total Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (11) Seats (#)	<input type="checkbox"/>	<input type="checkbox"/>	
_____ (4) Occupied Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (12) Servicing Positions/Vehicle Fueling Positions	<input type="checkbox"/>	<input type="checkbox"/>	
<u>127,268</u> (5) Gross Floor Area (gross sq. ft.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ (13) Shopping Center % Out-parcels/pads	<input type="checkbox"/>	<input type="checkbox"/>	
(% of development occupied <u>96%</u>)			_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>	
_____ (6) Net Rentable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>	
_____ (7) Gross Leasable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (16) Other _____	<input type="checkbox"/>	<input type="checkbox"/>	
(% of development occupied _____)			_____ (17) Other _____	<input type="checkbox"/>	<input type="checkbox"/>	
_____ (8) Total Acres (% developed: _____)	<input type="checkbox"/>	<input type="checkbox"/>				

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: First Shift: Start Time _____ End Time _____ Employees (#) _____ Second Shift: Start Time _____ End Time _____ Employees (#) _____ Third Shift: Start Time _____ End Time _____ Employees (#) _____ Parking Cost on Site: Hourly <u>\$2</u> Daily <u>\$30</u>			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? <input checked="" type="checkbox"/> No <input type="checkbox"/> 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) <input type="checkbox"/> (1) Transit Service <input type="checkbox"/> (5) Employer Support Measures <input type="checkbox"/> (9) Tolls and Congestion Pricing <input type="checkbox"/> (2) Carpool Programs <input type="checkbox"/> (6) Preferential HOV Treatments <input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks <input type="checkbox"/> (3) Vanpool Programs <input type="checkbox"/> (7) Transit and Ridesharing Incentives <input type="checkbox"/> (11) Telecommuting <input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements <input type="checkbox"/> (8) Parking Supply and Pricing Management <input type="checkbox"/> (12) Other _____		
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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: 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 #: Fax #: E-mail:

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

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						
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						

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: <input type="checkbox"/> (1) CBD <input type="checkbox"/> (3) Suburban (Non-CBD) <input type="checkbox"/> (5) Rural <input checked="" type="checkbox"/> (2) Urban (Non-CBD) <input type="checkbox"/> (4) Suburban CBD <input type="checkbox"/> (6) Freeway Interchange Area (Rural) <input type="checkbox"/> (7) Not Given				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.	
Independent Variable: (include data for as many as possible)²		Actual	Estimated	Actual	Estimated
_____ (1) Employees (#)	<input type="checkbox"/>	<input type="checkbox"/>	<u>400</u> (9) Parking Spaces (% occupied: _____)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
_____ (2) Persons (#)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (10) Beds (% occupied: _____)	<input type="checkbox"/>	<input type="checkbox"/>
_____ (3) Total Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (11) Seats (#)	<input type="checkbox"/>	<input type="checkbox"/>
_____ (4) Occupied Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (12) Servicing Positions/Vehicle Fueling Positions	<input type="checkbox"/>	<input type="checkbox"/>
<u>127,268</u> (5) Gross Floor Area (gross sq. ft.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ (13) Shopping Center % Out-parcels/pads	<input type="checkbox"/>	<input type="checkbox"/>
(% of development occupied <u>96%</u>)			_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>
_____ (6) Net Rentable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>
_____ (7) Gross Leasable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (16) Other _____	<input type="checkbox"/>	<input type="checkbox"/>
(% of development occupied _____)			_____ (17) Other _____	<input type="checkbox"/>	<input type="checkbox"/>
_____ (8) Total Acres (% developed: _____)	<input type="checkbox"/>	<input type="checkbox"/>			

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: First Shift: Start Time _____ End Time _____ Employees (#) _____ Second Shift: Start Time _____ End Time _____ Employees (#) _____ Third Shift: Start Time _____ End Time _____ Employees (#) _____ Parking Cost on Site: Hourly <u>\$2</u> Daily <u>\$30</u>		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? <input checked="" type="checkbox"/> No <input type="checkbox"/> 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) <input type="checkbox"/> (1) Transit Service <input type="checkbox"/> (5) Employer Support Measures <input type="checkbox"/> (9) Tolls and Congestion Pricing <input type="checkbox"/> (2) Carpool Programs <input type="checkbox"/> (6) Preferential HOV Treatments <input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks <input type="checkbox"/> (3) Vanpool Programs <input type="checkbox"/> (7) Transit and Ridesharing Incentives <input type="checkbox"/> (11) Telecommuting <input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements <input type="checkbox"/> (8) Parking Supply and Pricing Management <input type="checkbox"/> (12) Other _____	
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ite 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
 Organization: ITE at UH Mānoa
 Address: Holmes Hall 383, 2540 Dole St
 City/State/Zip: Honolulu, HI 96814
 Telephone #: Fax #: E-mail:

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

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						

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: <input type="checkbox"/> (1) CBD <input type="checkbox"/> (3) Suburban (Non-CBD) <input type="checkbox"/> (5) Rural <input checked="" type="checkbox"/> (2) Urban (Non-CBD) <input type="checkbox"/> (4) Suburban CBD <input type="checkbox"/> (6) Freeway Interchange Area (Rural) <input type="checkbox"/> (7) Not Given				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.	
Independent Variable: (include data for as many as possible) ²		Actual	Estimated	Actual	Estimated
_____ (1) Employees (#)	<input type="checkbox"/>	<input type="checkbox"/>	<u>400</u> (9) Parking Spaces (% occupied: _____)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
_____ (2) Persons (#)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (10) Beds (% occupied: _____)	<input type="checkbox"/>	<input type="checkbox"/>
_____ (3) Total Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (11) Seats (#)	<input type="checkbox"/>	<input type="checkbox"/>
_____ (4) Occupied Units (#) (indicate unit: _____)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (12) Servicing Positions/Vehicle Fueling Positions	<input type="checkbox"/>	<input type="checkbox"/>
<u>127,268</u> (5) Gross Floor Area (gross sq. ft.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____ (13) Shopping Center % Out-parcels/pads	<input type="checkbox"/>	<input type="checkbox"/>
(% of development occupied <u>96%</u>)			_____ (14) A.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>
_____ (6) Net Rentable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (15) P.M. Peak Hour Volume of Adjacent Street Traffic	<input type="checkbox"/>	<input type="checkbox"/>
_____ (7) Gross Leasable Area (sq. ft.)	<input type="checkbox"/>	<input type="checkbox"/>	_____ (16) Other _____	<input type="checkbox"/>	<input type="checkbox"/>
(% of development occupied _____)			_____ (17) Other _____	<input type="checkbox"/>	<input type="checkbox"/>
_____ (8) Total Acres (% developed: _____)	<input type="checkbox"/>	<input type="checkbox"/>			

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: First Shift: Start Time _____ End Time _____ Employees (#) _____ Second Shift: Start Time _____ End Time _____ Employees (#) _____ Third Shift: Start Time _____ End Time _____ Employees (#) _____ Parking Cost on Site: Hourly <u>\$2</u> Daily <u>\$30</u>	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? <input checked="" type="checkbox"/> No <input type="checkbox"/> 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) <table style="width:100%;"> <tr> <td><input type="checkbox"/> (1) Transit Service</td> <td><input type="checkbox"/> (5) Employer Support Measures</td> <td><input type="checkbox"/> (9) Tolls and Congestion Pricing</td> </tr> <tr> <td><input type="checkbox"/> (2) Carpool Programs</td> <td><input type="checkbox"/> (6) Preferential HOV Treatments</td> <td><input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks</td> </tr> <tr> <td><input type="checkbox"/> (3) Vanpool Programs</td> <td><input type="checkbox"/> (7) Transit and Ridesharing Incentives</td> <td><input type="checkbox"/> (11) Telecommuting</td> </tr> <tr> <td><input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements</td> <td><input type="checkbox"/> (8) Parking Supply and Pricing Management</td> <td><input type="checkbox"/> (12) Other _____</td> </tr> </table>	<input type="checkbox"/> (1) Transit Service	<input type="checkbox"/> (5) Employer Support Measures	<input type="checkbox"/> (9) Tolls and Congestion Pricing	<input type="checkbox"/> (2) Carpool Programs	<input type="checkbox"/> (6) Preferential HOV Treatments	<input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks	<input type="checkbox"/> (3) Vanpool Programs	<input type="checkbox"/> (7) Transit and Ridesharing Incentives	<input type="checkbox"/> (11) Telecommuting	<input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements	<input type="checkbox"/> (8) Parking Supply and Pricing Management	<input type="checkbox"/> (12) Other _____
<input type="checkbox"/> (1) Transit Service	<input type="checkbox"/> (5) Employer Support Measures	<input type="checkbox"/> (9) Tolls and Congestion Pricing											
<input type="checkbox"/> (2) Carpool Programs	<input type="checkbox"/> (6) Preferential HOV Treatments	<input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks											
<input type="checkbox"/> (3) Vanpool Programs	<input type="checkbox"/> (7) Transit and Ridesharing Incentives	<input type="checkbox"/> (11) Telecommuting											
<input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements	<input type="checkbox"/> (8) Parking Supply and Pricing Management	<input type="checkbox"/> (12) Other _____											

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

Institute of Transportation Engineers

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

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

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
Phone			
Fax			
Email			
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:

Institute of Transportation Engineers, 1627 Eye Street, NW Suite 600; Washington, DC 20006