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Prepared for  
Parker Ranch

Traffic  
Impact Study Report

for  
Parker Ranch Shopping Center Expansion

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April 1993

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## 1.0 SUMMARY

The Parker Ranch Shopping Center is located along Mamalahoa Highway, east of Lindsey Road, in the town of Waimea. The Parker Ranch Shopping Center plans to upgrade its existing facilities and expand the shopping center. The existing site consists of the following:

	<u>Square Feet of Floor Area</u>
1. Shopping Center main building	69,769
2. Parker Ranch Broiler	9,626
3. Kamuela Delicatessen	3,728
4. Laundromat building	<u>4,867</u>
Total floor area	<b>87,990</b>

Parker Ranch plans to demolish 20,880 square feet of the existing main building as well as the Kamuela Delicatessen and Laundromat buildings. Parker Ranch also plans to add 44,400 square feet of new building area to the shopping center main building. Therefore, the proposed site total square footage will have the following characteristics:

	<u>Square Feet of Floor Area</u>
1. Shopping Center main building	93,289
2. Parker Ranch Broiler	<u>9,626</u>
Total floor area	<b>102,915</b>

The total net gain of the Parker Ranch Shopping Center main building would be 44,400 square feet minus the 20,880 square feet for a total net gain of **23,520** square feet of new building area.

### 1.1 Project Traffic Increases

The expansion of the Parker Ranch Shopping Center is estimated to generate an increase of 24 and 14 vehicles trips to and from the site, respectively, during the morning peak hour. During the afternoon peak hour, the increase is estimated at 77 and 77 new vehicle trips to and from the site, respectively. The estimated daily trips generated by the expansion would be 1,665 vehicles.

## 1.2 Project Driveways

The two driveways located along Mamalahoa Highway approximately 275 and 625 feet east of Lindsey Road would operate at level of service A in 1995 when the project is completed. The two driveways along Pukalani Road which are located approximately 125 and 225 feet south of Mamalahoa Highway would also operate at level of service A when the project is completed.

## 1.3 Impact on Adjacent Intersections

Traffic volumes at the traffic signal-controlled intersection of Lindsey Road/Mamalahoa Highway would increase by 0.52% in the morning peak hour and 3.2% in the evening peak hour due to project traffic in 1995. There will be no change in level of service at the Lindsey Road/Mamalahoa Highway intersection after the project is completed in 1995. The level of service will remain at B in the morning peak hour and C in the evening peak hour, respectively.

Traffic volumes at the two-way stop-sign controlled intersection of Pukalani Road/Mamalahoa Highway would increase by 1.67% in the morning peak hour and 7.5% in the evening peak hour due to project traffic in 1995. The north and southbound left-turning vehicles at the intersection of Pukalani Road/Mamalahoa Highway would experience long delays due to heavy cross-flow traffic along Mamalahoa Highway. The resultant level of service for the northbound and southbound left-turns is estimated to be an E in 1995.

## 1.4 Recommendations

1. Install traffic signal at the intersection of Pukalani Road and Mamalahoa Highway, which is located approximately 950 feet east of Lindsey Road. This intersection will be utilized as the main driveway for vehicles desiring to enter and exit the site. The new traffic signal will benefit southbound left-turn vehicles exiting Waimea Shopping Center as well as northbound left-turns exiting Parker Ranch Shopping Center via Pukalani Road. The traffic signal would improve the level of service from E to B for each of these turning movements.
2. The existing lane configuration at the intersection of Pukalani Road/Mamalahoa Road is satisfactory in terms of handling 1995 future and project traffic volumes. Currently, the westbound approach on Mamalahoa Highway has one left-turn lane, one through lane, and one shared through-right lane. Currently, the eastbound approach on Mamalahoa Highway has one left-turn lane, one through lane, and a 4-foot wide painted channelization marking that separates eastbound through traffic from the parking area at the Kamuela Feed store. There appears to be enough of roadway width to provide an eastbound right-turn lane by moving the 4-foot wide painted channelization markings. This would also be

likely to require removal of the parking in front of the Waimea Seed Store.

The existing two-lane northbound and southbound approaches provide adequate capacity to accommodate the estimated 1995 traffic volumes. However, future new developments along Pukalani Road could increase traffic on Pukalani Road to a level requiring the addition of a separate left-turn lane on the approach to Mamalahoa Highway. The project modifications should allow adequate building setbacks and right-of-way to permit future widening for addition of the left-turn storage lane.

3. Convert existing two-way continuous left-turn lane at the east-west approaches of Mamalahoa Highway at Pukalani Road to designated single left-turn storage bays. The left-turn bays should be at least 125 feet long to provide storage for east-west left-turning vehicles.
4. Install stop signs at the unsignalized driveway exits along Pukalani Road for on-site traffic leaving Parker Ranch Shopping Center.

## 2.0 INTRODUCTION

The purpose of this report is to document the traffic impacts associated with the proposed expansion of the Parker Ranch Shopping Center. This facility is located in the town of Waimea along Mamalahoa Highway between Lindsey Road and Pukalani Road (see Figure 1). The existing site consists of the following: (1) Shopping center main building with a total floor area of 69,769 square feet; (2) Parker Ranch Broiler with a total floor area of 9,626 square feet; (3) Kamuela Delicatessen with a total floor area of 3,728 square feet; and (4) laundromat building with a total floor area of 4,867 square feet. The site contains approximately 375 parking stalls.

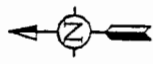
The developer plans to demolish 20,880 square feet of the existing main building as well as the Kamuela Delicatessen and laundromat buildings. The developer also plans to add 44,400 square feet of new building area to the shopping center main building and 275 parking stalls.

The objectives of this study included:

1. To review existing roadway and traffic conditions.
2. To identify the probable increase in traffic related to the shopping center expansion and future ambient traffic growth in the area.
3. To assess the ability of the area's existing and planned roadways to accommodate project and future traffic.
4. Identify appropriate measures to mitigate any anticipated project related traffic impacts or other roadway deficiencies adjacent to the site.

The scope of the study included:

1. Collection and assembly of inventories of existing roadway conditions and current traffic flow.
2. Evaluation of projected traffic impacts, including: (1) projections of growth for area background traffic; (2) anticipated project trip-generation and distribution; (3) assignment of project-related traffic to the area roadway network; and (4) volume-capacity analyses of primary intersections. The two primary intersections are Lindsey Road/Mamalahoa Highway and Pukalani Road/Mamalahoa Highway.
3. Identification of appropriate measures to mitigate anticipated project-related traffic impacts and other area roadway deficiencies.



TO KAWAIIHAE

LINDSEY RD

MAMALAHUA HIGHWAY

TO KAILUA-KONA

PARKER RANCH SHOP. CTR DRY

PARKER RANCH SHOP. CTR

VAIMEA CENTER

KECK OBSERVATORY

LUCY HENRIQUES HOSPITAL

ACE HARDWARE

KAMUELA DELI DRIVEWAY

PARKER RANCH SHOPPING CENTER PROJECT SITE

PARKER RANCH SHOPPING CENTER EMPLOYEE PARKING & DELIVERIES

TO STABLE AREA

PUKALANI RD

CHURCH RD

TO HONOKAA

NOT TO SCALE

# PARKER RANCH SHOPPING CENTER PROJECT LOCATION

Figure 1