CHAPTER 5
AIRPORT DEVELOPMENT ALTERNATIVES

5.1 OVERVIEW

This chapter presents alternatives that were developed and evaluated during the MP Update planning process to illustrate and explore the policy and layout options available to the DOTA.

The facility requirements described in **Chapter 4** serves as the basis for the formulation of alternative development concepts for the OGG that meet the development objectives. These alternatives were used to explore the implications of different facility configurations (e.g., runway length, number of runways, etc.) and locations (e.g., East Ramp and South Ramp).

Due to the large number of varied facilities that make up the OGG complex, an almost unlimited number of combinations are possible. At least three (3) formal alternatives were developed for the airfield and terminal, and at least two (2) alternatives for airport access. The access alternatives were developed to complement the alternative projects listed in the airfield and terminal plans.

The airfield plan alternatives were presented to and discussed with airport users, government agencies, members of the community, and DOTA staff. Following this evaluation process, the DOTA selected one (1) airfield development plan as the preferred OGG MP, which is presented in **Chapter 6**.

The alternatives presented in this chapter are discussed at the terminal scale because the majority of the development plan alternative projects are located in the terminal area only.

Most of the components of the recommended OGG MP appear in one (1) or more of the various alternatives considered for this project. However, in a few instances, the final planning solution was arrived at after public, DOTA staff, and FAA review. In all such cases, the solutions proposed in the preferred OGG MP are the result of an analysis of development plans

recommended to the DOTA during consultations. They are intended to resolve potential conflicts and/or inadequacies that were identified by the reviewers of the alternatives described in this chapter.

Portions of airport capital improvement projects are in progress (e.g., property acquisition) or have been completed since the 1993 OGG MP (e.g., relocated VORTAC). Some projects have been removed from consideration altogether for lack of demand, or require further study or review by DOTA (e.g., flight kitchen facilities).

5.2 COMMON ELEMENTS

A number of proposed development projects are included in all three (3) alternative development plans were circulated for public review and evaluation. These "common elements" are described below.

5.3 AIRFIELD

The airfield includes all development elements that have direct contact or association with aircraft including runways, taxiways, aprons, hangers, aircraft parking, and certain navigation aids. Not addressed are airfield lighting and navigational aids. Three (3) separate actions are proposed for Runway 2-20 and include: (1) reconstruction of the runway, (2) extending the runway, and (3) development of a parallel runway.

5.3.1 RUNWAY 2-20

5.3.1.1 RUNWAY RECONSTRUCTION

As discussed in **Chapter 4**, pavement distress requires the reconstruction of Runway 2-20. Reconstruction is a long-term investment in the future of the OGG. It is needed to ensure continued safe operations, the movement of goods and services, and the continued contributions to Maui's economy. The closure of Runway 2-20 is not considered a feasible option due to the potential for severe adverse impacts to the economy. Accordingly, the development of a temporary runway would facilitate the reconstruction of Runway 2-20 and avoid potential negative impacts to the economy.

The DOTA commissioned, *The Kahului Airport Runway 2-20 Reconstruction Feasibility Study* (2012), to identify and evaluate reasonable and practicable alternatives. Eight (8) alternatives and a No-Action Alternative were evaluated using a three (3) step screening process. The following summarizes the process.

Step #1: The proposed alternative must meet the Purpose and Need for the project:

- Provide for the reconstruction of Runway 2-20.
- Maintain the airfield capability to accommodate mainland transpacific flights.

Step #2: Analyze the Operation and Constructability Factor and Cost of each alternative:

- Assess implications for airport safety and operations including compliance with FAA design standards.
- Analyze the complexity of staging, phasing, and construction activities required to implement the alternative.

Step #3: Identify Environmental Considerations:

- Assess impacts to environmental resources that require regulatory response, such as: floodways, wetlands, water quality, noise and Section 4(f) resources; and others including the level of impact, high, medium or low.

Alternatives that meet the Step #1 criteria would progress to the Step #2 analysis. Alternatives meeting Step #2 would progress to the Step #3 analysis. Alternatives meeting the criteria in all three (3) screening steps along with the No-Action Alternative will be used in the future for a more detailed environmental and planning evaluation.

The following alternatives were evaluated:

- No Action Alternative
- Alternative 1 – Close airport runways during reconstruction

- Alternative 2 – Reconstruct existing runway with no other action
- Alternative 3 – Extend Runway 5-23 to 7,000 feet (ft.) (1,260 ft. west and 750 ft. east), and use shortened Runway 2-20 during construction at intersection
- Alternative 4 - Extend Runway 5-23 to 7,000 ft. (200 ft. west and 1,810 ft. east), and use shortened Runway 2-20 during construction at the intersection
- Alternative 5 – Extend Runway 5-23 to 7,000 ft. (1,260 ft. west and 750 ft. east), shift Runway 2-20 by 2,605 ft. south and reconstruct, and eliminate the intersection of Runways 5-23 and 2-20
- Alternative 6 – Extend Runway 5-23 to 7,000 ft. (1,260 ft. west and 750 ft. east), extend Runway 2-20 by 2,605 ft., and reconstruct for an ultimate Runway 2-20 length of 9,600 ft.
- Alternative 7 – Construct a new parallel Runway 2R-20L, 7,000 ft. long
- Alternative 8 – Construct a new replacement Runway 2-20, 7,000 ft. long

Of the alternatives presented, the DOTA initially favored Alternative 5. These improvements would have cost approximately $145.2 mil. This alternative was ultimately not selected by HDOT.

The *Proposed Approach to the Reconstruction of Runway 02/20*, by AvAirPros and Conway Consulting, 2014, was commissioned by the Airlines Committee of Hawai'i (ACH) to provide additional information to supplement the *Kahului Airport Runway 2-20 Reconstruction Feasibility Study*. Four (4) criteria were used to evaluate the options. Two (2) additional approaches with five (5) options were identified. The following is a summary of the evaluation process.

The Evaluation Criteria (also referred to as Fatal Flaws) were used to evaluate the following alternatives. The alternatives that met the following criteria would be considered as having met a Fatal Flaw, and were subsequently eliminated:

- No Airport Closure
- Restrictions of Flight Operations
- Exacerbating Environmental Issues
- Unable to Produce a Solution in Five (5) Years

<u>Alternatives to the Reconstruction of Runway 2-20 include:</u>

Approach A – Temporary Runway. Reuse existing pavement or invest in new pavement following the reconstruction of Runway 2-20 to create an interim Temporary Runway while Runway 2-20 is reconstructed on the existing centerline.

Option 1 – Use Taxiway A as a temporary runway

Option 4 – Temporary Runway on East Apron Taxiway

Option 5 – Interim Runway Construction East Runway 2-20

Approach B – Relocated Runway. Construction of a new runway to replace existing Runway 2-20 which would subsequently be converted for reuse as a taxiway.

- Option 2A – Construction of a new, 9,600 ft. permanent replacement runway located 400 ft. lateral distance east of Runway 2-20;
- Option 2B – Construction of a new, 9,600 ft. permanent replacement runway located 600 ft. lateral distance east of Runway 2-20; and
- Option 3 – Construction of a new permanent replacement runway located 1,000 ft. east of Runway 2-20.

The ACH recommended Approach A, Option 4, involving the construction of a temporary runway scheme on the east apron taxiway. This is the only option that did not meet any of the four (4) evaluation criteria.

The proposed temporary runway will provide Taxiway "L" with a length of 7,000 ft. and will be designed to maintain the existing and future aircraft mix that use Runway 2-20. This

temporary runway will be used as a parallel taxiway once Runway 2-20 reconstruction is completed.

Additional actions required to implement this alternative involve the relocation or closure of Haleakalā Highway, drainage improvements, connection to Taxiway "A", relocation of GA facilities/aircraft/tie downs, relocation of fuel facilities and some helicopter operations, a service road, and development of a parallel taxiway.

In order to allow OGG to expand operations to Midwest destinations and increase the safety of aircraft take offs and landings, the extension of Runway 2-20 was considered.

5.3.1.2 RUNWAY 2-20 EXTENSION

Extending Runway 2-20 has been the subject of discussion since the last update of the OGG MP. The discussion has focused on two (2) primary purposes: (1) to increase operational safety during take-offs and landings, and (2) to increase the operational functionality of the airport for travel to destinations provided by airlines serving OGG. This would be principally accomplished by minimizing weight limitations of the aircraft.

The lengthening objective would extend the length of Runway 2-20 so that aircraft departing from OGG for the West Coast or Midwest destinations would have minimal weight penalties. Therefore, all alternatives propose an extension to Runway 2-20 by 1,535 ft., to the south towards Hāna Highway, for a total length of 8,530 ft. See **Figure 5-1** on Page 5-5. The length of the runway extension was limited by the location of Hāna Highway and the area needed for the RPZ is within the sponsor's control. The alternatives with runway extension lengths of 1,535 ft., required that the RPZ to extend over Hāna Highway and into neighboring properties. An extension greater than 1,535 ft. would require extensive land acquisition, and relocation of Hāna Highway further south or providing vehicular access under an extended runway. These alternatives were rejected due to major additional costs for construction and land acquisition.

Extending Runway 220 south towards Hāna Highway would require the permanent closure of Haleakalā Highway between Hāna Highway and Keolani Place, improvements to the existing drainage system, relocation of navigational aids, and other utility upgrades.

An alternative to handle OGG operations during the reconstruction of Runway 2-20 is to construct a new parallel Runway 2R-20L located east of the existing runway. This alternative was not considered because of the cost and the time needed for land acquisition.

5.3.2 PARALLEL RUNWAY 2R-20L

A new 7,000 ft. parallel runway that is offset by 2,500 ft. from Runway 2-20 along with connecting taxiways is proposed. See **Figure 5-1** on Page 5-5. The new Runway 2R-20L will improve the operational capacity at the OGG in two (2) important ways: (1) it will allow simultaneous operations of the runways, and (2) it will ensure that the airport is always in service in the event that the primary runway is closed. Land acquisition is proposed during the planning period to allow for development options for airport expansion beyond the planning period and prevent the development of incompatible uses adjacent to existing and planned airport improvements.

RUNWAY ALTERNATIVES:

> Runway 2-20 Extended by 1,535 ft. to South

> Future Parallel Runway (2-20) at 7,000 ft.

> Runway 5-23 at 4,990 ft.

> Temporary Runway at 7,000 ft.

Figure 5-1 Runway Alternatives

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Figure 5-2 Lands to be Acquired

The new parallel Runway 2R-20L development assumes the need to relocate and/or provide new navigation aids, runway lights, and taxiway lights. Additionally, new and/or realigned BRLs, RSAs, and RPZs will also be required. Although the parallel runway might not be developed until a future date beyond the planning horizon of this study, it is included in the plan so that the scope of projects and alternatives for the OGG as a whole, are not limited.

5.3.3 AIRPORT BOUNDARIES

All alternatives propose the following changes to the Airport boundaries, see **Figure 5-2**:

- Fee simple land acquisition for portions of Parallel Runway 2R, RPZ, Connecting Taxiways, Navigational Aids (NAVAIDS), RSA, and East Ramp Access Road.
- The specific method of land acquisition, e.g., direct purchase, lease, license, or easement, requires additional study outside the scope of this MP Update.

5.3.4 AIRCRAFT PARKING, APRONS, AND TAXIWAYS

Improvements to the apron in front of the existing ASIF building and cargo facility are in progress. New improvements include transient aircraft parking to accommodate military and other non-based aircraft. A new apron with concrete hardstands is proposed south of the existing passenger terminal facilities to accommodate uses in the proposed industrial lots. Realigning the intersection of Taxiway "B" and "F" for Runway 5-23 is proposed to provide a full-length parallel taxiway and minimize turns. Additionally, new connecting taxiways will need to be constructed to support the new Parallel Runway 2R-20L.

5.3.5 EAST RAMP

Expansion of the existing helicopter facility is proposed to allow for an increase in operations. A new GA T-hanger (size and configuration to be determined) is also proposed to be constructed adjacent to existing facilities.

5.4 TERMINAL PLAN ALTERNATIVE

The passenger terminal area includes all development proposals related to passenger handling. This includes proposals for expanding the passenger terminal to the south; adding new gates at the north end, expanding the terminal holdrooms, expanding the central 2nd level, and improving the ticketing area. Development of the passenger terminal is driven by the following factors:

- The need for better passenger flow from ticketing to boarding
- The current shortage of gates and passenger holding capacity to accommodate wide-bodied aircraft

The use of large capacity, wide-bodied aircraft for overseas flights translates to an increase in the number of passengers flying at one time. As discussed in previous chapters, the number of overseas flights is increasing; however, the passenger terminal at the OGG was designed mainly for inter-island travel. With the increased overseas flights, OGG now has a capacity issue for passenger holding areas and gates.

Existing passenger holdroom facilities are currently under capacity for wide-bodied aircraft, particularly between gates 1 through 16. With the increased use of wide-bodied aircraft, existing facilities will continue to be inadequate to accommodate the increased numbers of departing passengers.

The increased use of wide-bodied aircraft has also led to gate shortages because a single wide-bodied aircraft occupies several gates or aircraft parking positions.

Adding gates to the north end of the passenger terminal will require more apron space to accommodate additional parked aircraft. This may result in the relocation of the commuter terminal.

Figure 5-3 on Page 5-9 shows the proposed terminal facilities considered. This is a conservative alternative plan which includes items that have the least amount of impact on existing land use and requires the least amount of projects. The major assumption is that airport operations would not reach pre-2007 recession levels for 15 or more years. The improvements unique to this alternative are summarized in **Table 5-1**.

5.5 AIRPORT SUPPORT FACILITIES

5.5.1 AVIATION SUPPORT AND LEASE LOTS

Additional support facilities are needed for aviation and other industrial activities to encourage growth in operations. On the South Ramp, the proposed industrial lease lots are intended for uses requiring direct airfield and apron access. See **Figure 5-1** on Page 5-5. Potential users are airline mechanic shops, ground support equipment, air cargo carriers, aircraft parts vendors, and other aviation related uses. Aviation lease lots for airlines and their support activities are also proposed at the future industrial lease lots and East Ramp. An additional lease lot subdivision is proposed off Keolani Place for other aviation related tenants, e.g., rent-a-car or cargo distribution.

During the reconstruction of Runway 2-20, uses that required relocation on the East Ramp can be accommodated at the South Ramp.

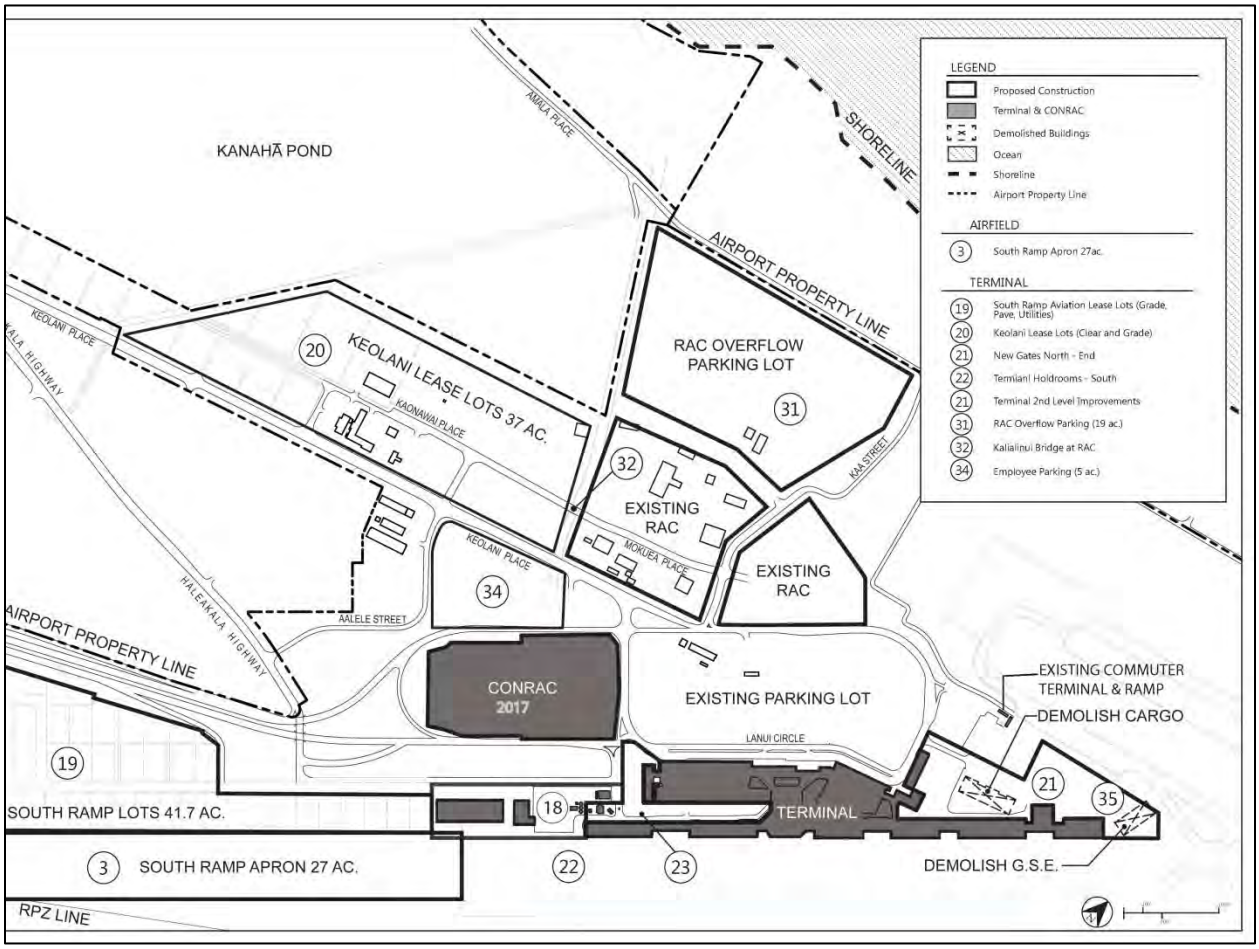

Figure 5-3 Terminal Area Plan

New cargo facilities are proposed south of the main passenger terminal in the South Ramp industrial area. These new facilities will accommodate existing users that require both covered areas and refrigerated spaces. Existing cargo is currently staged on the ramp south of the existing terminal building. A bulk jet fuel storage facility is proposed with a pipeline to the aircraft ramp fronting the passenger terminal. A site has already been prepared off Keolani Place, towards Kanahā Beach Park, to house the fuel storage facility. Construction and operation of this facility would address FAA concerns of fuel trucks making runway crossings. Lastly, additional GA T-hangers have been proposed on the East Ramp to support future growth.

A project is proposed to pave the existing rent-a-car overflow parking lots. This alternative would retain the existing overflow parking area. The existing gravel lots are directly north of the ground transportation subdivision. Rental car companies could potentially retain some of their existing maintenance facilities. Thus, this was the preferred layout but other alternatives were proposed to address potential major land use changes.

5.5.2 NEW POSTAL FACILITY

A new USPS facility is proposed in the industrial lease lots in the South Ramp. The existing USPS facility, located off Keolani Place, will have its access to the airfield cut off by the new airport access road. See **Figure 5-3**. Relocation to the

South Ramp industrial lease lots will provide the required direct access to the airfield.

5.5.3 CONSOLIDATED RENT-A-CAR FACILITY

The new CONRAC facility would replace some functions at the existing ground transportation subdivision. This project was inspired by the need to improve customer service and relieve traffic on Lanui Circle. A multi-level CONRAC facility would provide space for all vendors, their vehicles, customer service offices, ready-return, and quick turn-around areas. However, all maintenance operations and overflow parking would be located outside of the CONRAC on separate lots and baseyards. The CONRAC site would be located south-west of the existing passenger terminal parking lot. This site is presented in each of the alternative development concepts. This particular site was recommended out of a site selection study for the CONRAC for the following reasons. See **Figure 5-4**:

- Customer convenience due to proximity to the passenger terminal
- Rental car operations are optimized because quick-turn-around areas are next to ready/return areas and customer service area
- Busing operations are minimized due to proximity to passenger terminal
- In this location public/employee parking could be funded by Customer Facility Charges instead of DOTA funds

Prior to the start of construction in the second quarter of 2016, existing land uses in the area of the preferred CONRAC site must be relocated to the proposed industrial lease lots on the South Ramp. These existing land uses include USPS and courier services.

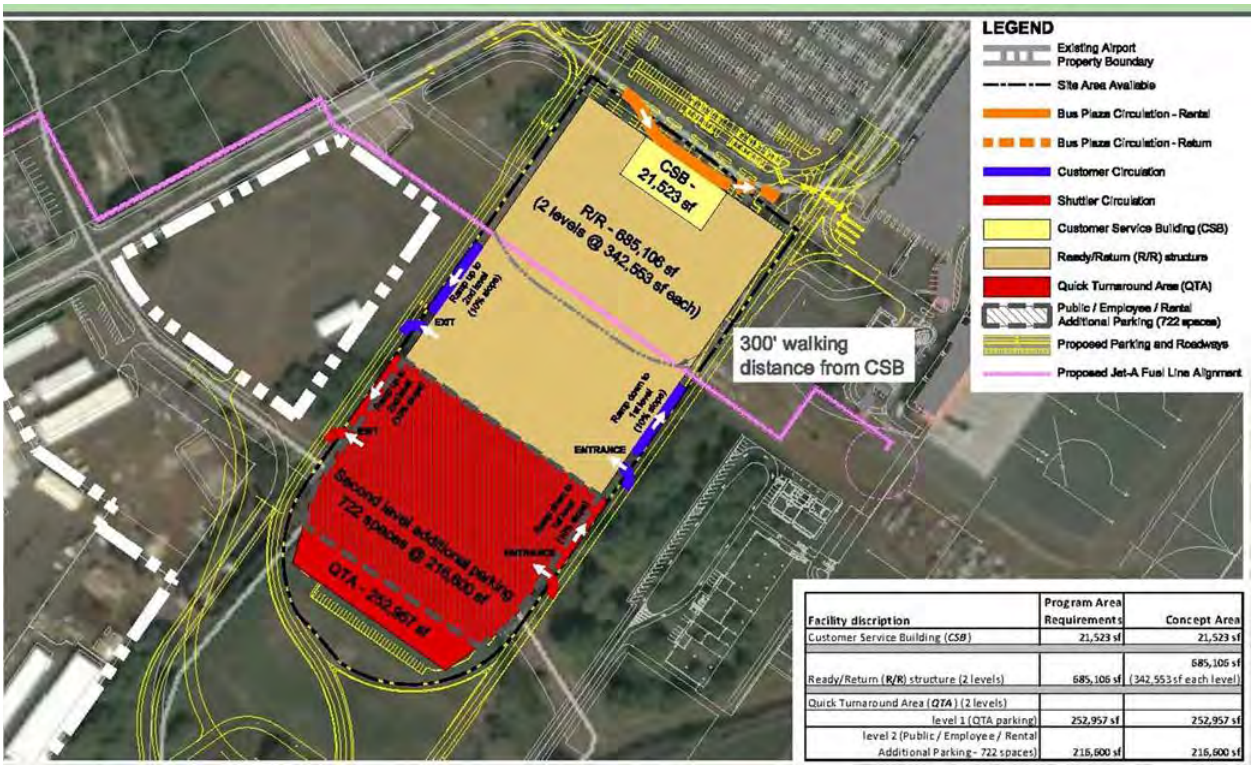

Figure 5-4 CONRAC Plan

AIRFIELD	ALTERNATIVE PLANS
1	Runway 2-20 Extension (1,535 ft. long) (Grade, Pave, Navaids)
2	Taxiway A Extension
3	South Ramp Apron 27 acre (ac.)
4	Taxiway Realignment (Taxiway "B", "F" and "G")
5	Transient Aircraft Parking (9 ac.)
6	Runway 2R-20L (Parallel Runway) 7,000 ft.
7	Parallel Taxiway for Parallel Runway 2R-20L
8	Temporary Runway 2-20 (using Taxiway "L") plus Navaids
9	Kalialinui Channel Improvements
10	Parallel Taxiway "M" plus Service Road
11	Navigational and Landing Aids - Replacement
12	Final Approach and Take Off (FATO) Relocation
13	Runway 2-20 Reconstruction
14	Crossover Taxiway Connecting Taxiway "A" to Runway 2
15	Temporary Runway 2-20 Blast Pads
16	Temporary Runway 2-20 RSA Improvements
17	Drainage Improvements
TERMINAL	**ALTERNATIVE PLANS**
18	Helicopter Facility Expansion (Grade and Pave)
19	South Ramp Aviation Lease Lots (Grade, Pave, Utilities)
20	Keolani Lease Lots (Clear and Grade)
21	Terminal North - New Gates (Clean and Demo)
22	Terminal South - Holdrooms
23	Terminal 2nd Level Improvements
24	Haleakalā Highway (To Be Closed)
25	Realign Hāna Highway (Grade and Pave)

Table 5-1 Terminal Scale Alternative: List of Projects (Continuation on Page 5-12)

TERMINAL	ALTERNATIVE PLANS
26	GA T-hangars – East Ramp
27	Land To Be Acquired
28	East Ramp Access Road
29	East Ramp Access Road Tunnel
30	RAC Overflow Parking (19 ac.)
31	Bridge to Rent a Car (RAC) subdivision
32	Industrial Aviation Lots East Ramp (20 ac.)
33	Employee Parking (5 ac.)
34	Demolish Existing Ground Service Equipment (GSE), Cargo
35	Cell Phone Parking Lot
36	East Ramp Temporary Relocation of Services
Source: R. M. Towill Corporation *Notes: Projects list compiled from terminal and airfield alternative plans.*	

Table 5-1 Terminal Scale Alternative: List of Projects (Continuation from Page 5-11)

5.5.4 SOLAR POWER

Solar power has been proposed to supplement airport energy needs. The use of renewable energy will relieve demand on the county's power grid while helping airport operations to achieve greater self-sufficiency. Approximately 3,420 solar panels have been installed on the roof of the passenger terminal, with an additional 492 solar panels installed at other locations. The capacity of the installed solar panels generate approximately 5,300 kilowatt hours (kWh) per day contributing to the total energy needs of OGG, which is on average 32,909.7 kWh per day.

The installation of solar and other forms of renewable energy at the OGG will continue to be reviewed by the DOTA and FAA to ensure that aviation operations are not impacted.

5.6 AIRPORT ACCESS AND PARKING

A new airport access road is currently under construction and is scheduled for completion in Fall 2016. It will replace the Keolani Place/Dairy Road as the primary access to the passenger terminal facilities. This first phase of roadway construction includes an at-grade, signalized intersection at Hāna Highway. Subsequent phases of the airport access road will ultimately include an at-grade separated interchange at Hāna Highway. The primary beneficiary of this improvement will be the through-traffic on Hāna Highway, which would no longer have to stop for airport-related traffic. Thus, the access road has generally received wide public support. It will complement the improvements the State Department of Transportation Highways Division (DOTH) has already made to Hāna Highway along the boundary of the OGG.

Additional parking is required for the passenger terminal. Other smaller scale improvements considered include additional cell phone waiting areas and supplemental access roads west of Keolani Place to improve traffic flow on Lanui Circle. In particular, the access that includes a bridge over Kalialinui Gulch is meant to facilitate future traffic increases due to the development of the Keolani Place Lease Lots.

In addition to the alternatives presented at the terminal scale, access and parking elements were also being considered at a smaller scale. These smaller scale improvements are shown in the terminal scale drawings but are meant to emphasize the visualization of traffic flow, provide a detailed layout of the proposed CONRAC facility, and show smaller projects such as cell phone waiting areas. The access plan alternatives, which were formulated to accommodate the three (3) terminal drawings, focused on facilitating vehicular movement by reducing conflicts, and considering intersection layouts or shuttle routing.

Common elements in the access alternatives include the cell phone waiting area proposed to be adjacent to the inbound traffic lane of the new access road and the lot that belongs to the ASIF and Air Cargo Facility. This location would allow vehicles who are waiting for deplaning passengers to park close to the terminal while not contributing to traffic on the loop road.

The CONRAC facility would generate traffic on the Lanui Circle and new access road loop through the rental car return and pickup, shuttle service, and bus service areas.

With the new access road from Hāna Highway connecting with Lanui Circle, it has been proposed to paint islands in order to separate turning movements to and from Keolani Place. See **Figure 5-5** on Page 5-14. A signal at the intersection of Lanui Circle, Keolani Place, and the new access road was also considered. However, it was determined that future traffic volumes would not warrant such an investment.

This access alternative proposes to re-locate existing employee parking to the south of the CONRAC facility. Therefore, passengers who use public parking would be closer to the passenger terminal. Employees would be able to ride the airport shuttle to and from the terminal facility. This shuttle would also service RAC customers to and from the CONRAC facility.

Comments from public meetings were used to refine proposals, and assisted in the removal or addition of projects. These refined proposals were reviewed again with DOTA staff to ensure compatibility with existing development, future and existing capacity, and future and existing operational needs, all within the need to meet FAA regulations.

The process of plan review was very integrative as the planning process balanced future scenarios with ever changing existing conditions. For example, neighboring land owners such as A&B Properties have been developing plans for an industrial park south of the airport property. Their proposals necessitated the need to reanalyze the MP proposals to ensure compatibility of land use while maintaining airport operational needs. Much effort was directed towards maintaining adequate communication and distribution of information between DOTA staff, consulting staff, and public stakeholders as alternative proposals evolved.

5.7 PLAN EVALUATION

5.7.1 METHODOLOGY

This section presents the methodology for the evaluation of alternative plan proposals, which led to the selection of the preferred OGG MP. The plan evaluation methodology can be summarized in the following steps:

- Preliminary proposals were developed based on airport staff interviews, projects completed since 1993, airport stakeholder comments, passenger forecasts, and operation forecasts
- The preliminary proposals were presented to DOTA staff for comment and approval for presentation to the public

- The Technical Advisory Committee and Citizen Advisory Committee reviewed and commented on the proposals at public meetings

5.7.2 PLAN EVALUATION

The alternatives evaluation process was an iterative process rather than an empirical selection process. As stated previously, many individuals and organizations provided input into the process and as a result, an important goal was to achieve consensus. It should be noted that the final selection of a particular plan component was not always unanimous. Ultimately, the selection of particular plan components was based on the criteria of "what was best for the airport and island of Maui."

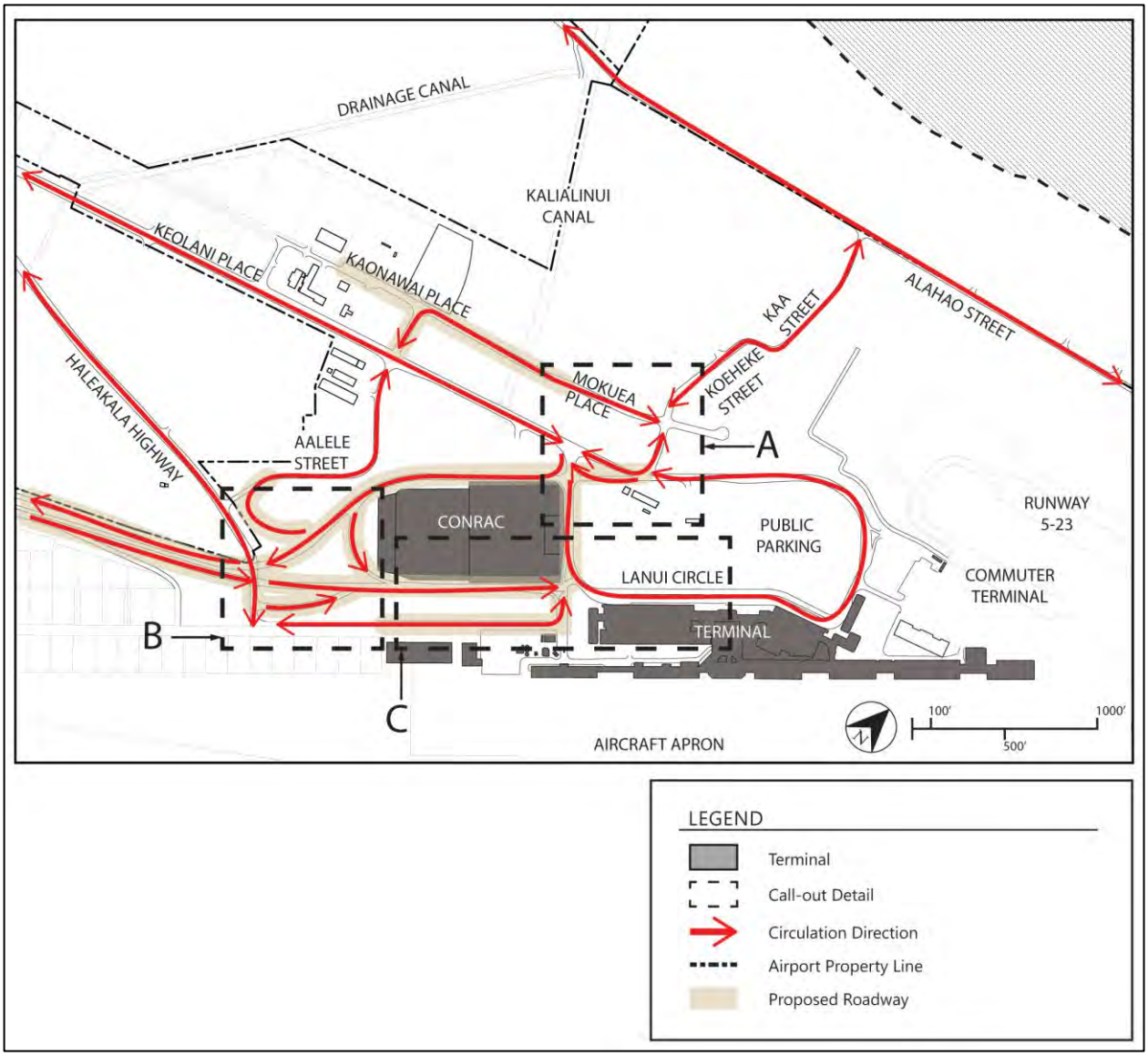

Figure 5-5 Terminal Access Plan

The evaluation led to the selection of the preferred OGG MP. The preferred alternative proposed in the OGG MP includes the following components:

- Runway 2-20 Reconstruction
- Taxiway Upgrade to 7000 ft. (Temporary Runway/Taxiway "L")
- Extension of Runway 2-20 to 8,530 ft.
- Construct Parallel Runway at 7000 ft. and associated taxiways
- East Ramp Projects including new GA Hanger, Itinerant Parking, and GA Lease Facilities.
- South Ramp Industrial Lots
- CONRAC Facility
- Terminal expansion to the North and South of existing passenger terminal.

Table 5-2 shows the result of the evaluation process and **Figure 5-6** on Page 5-17 shows the preferred plan along with the components that collectively make up the MP Update.

PROJECT	AIRFIELD ALTERNATIVE	TERMINAL ALTERNATIVE	ACCESS ALTERNATIVE
Runway 2-20 Re-construction	●	●	N/A
Extend Runway 2-20 to 8,530 ft. (1)	●	●	N/A
Parallel Runway 7,000 ft. (2+3)	●	N/A	N/A
Industrial lots – South Ramp (4)	●	●	●
Consolidated RAC (5)	O	●	●
Terminal expansion to north (6)	N/A	●	N/A
Terminal expansion to south (7)	N/A	●	N/A
Holdroom reconstruction (8)	N/A	●	N/A
East Ramp projects (9)	●	N/A	N/A

Source: R. M. Towill Corporation

Notes: N/A = Not applicable, project not included in alternative

● = Project supported and included as preferred alternative.

O = Project moderately supported and included in preferred alternative.

(1) Includes: connecting taxiway, navigation aids, runway lights, runway safety areas, runway protection zones, land acquisition, Haleakalā Hwy closure between Hāna Highway and Keolani Place.

(2) Includes: rent-a-car relocation, commuter terminal and apron relocation, runway safety area, runway protection zones, navigation aids, perimeter road relocation, Ka'a Street relocation.

(3) Includes: land acquisition, runway safety area, runway protection zones, navigation aids, perimeter road relocation, east ramp access road.

(4) Includes: access from new access road, land use entitlements.

(5) Includes: relocation from existing area to new location and land use entitlements.

(6) Includes: relocation/demolition of GSE and former cargo facilities.

(7) Includes: expansion of 1 additional gate.

(8) Includes: expanding the capacity of gates 1-16 to west.

(9) Includes: new GA hangar, itinerant parking, and GA lease facilities.

Table 5-2 Plan Evaluation

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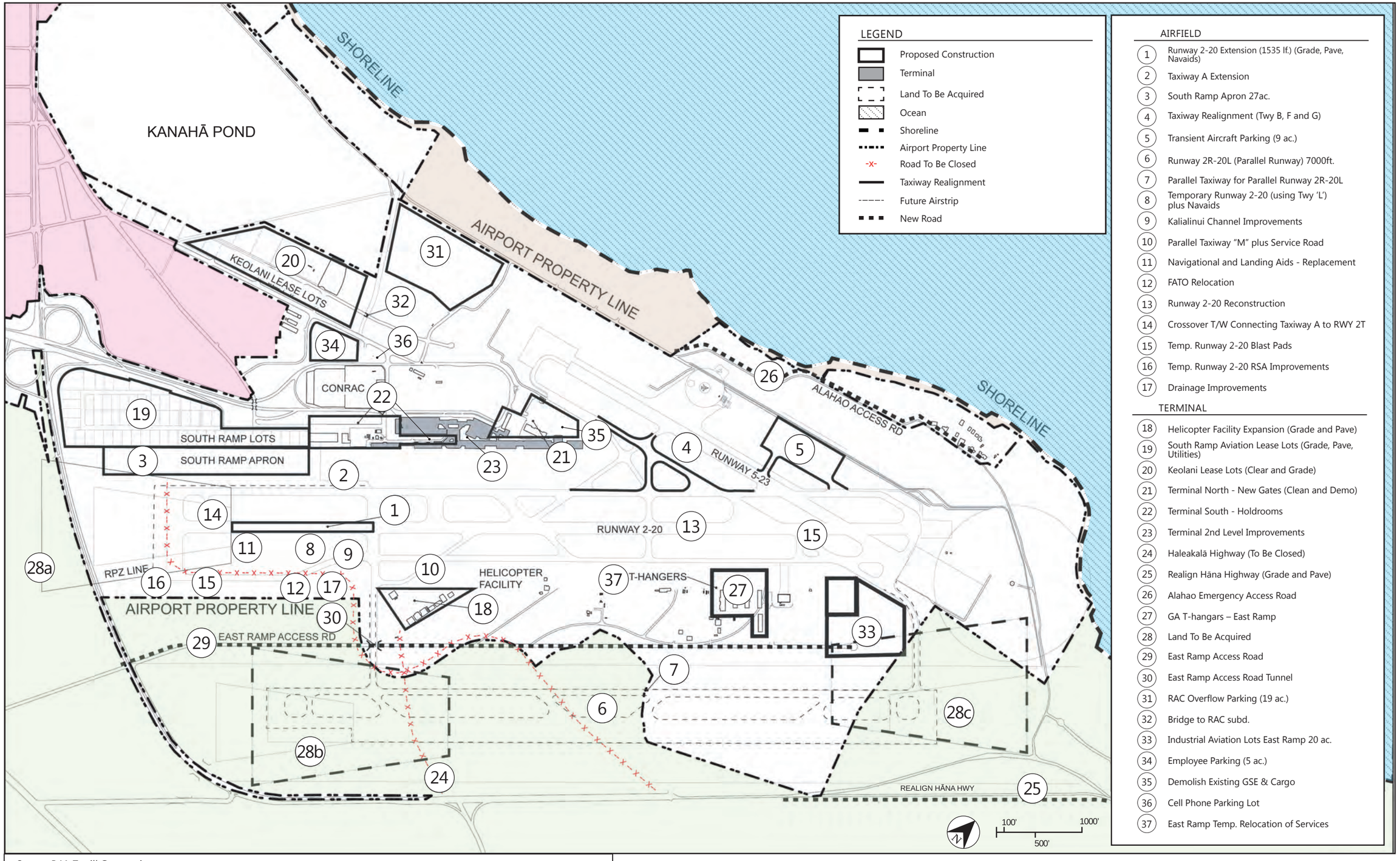

Source: R.M. Towill Corporation

Figure 5-6 Preferred Plan

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